VAASAN YLIOPISTO

HENRI HAKALA

# Configuring Out Strategic Orientation

ACTA WASAENSIA NO 232

BUSINESS ADMINISTRATION 95
MANAGEMENT AND ORGANIZATION

UNIVERSITAS WASAENSIS 2010

Reviewers

Professor Kaisu Puumalainen
Lappeenranta University of Technology
Department of Business Economics and Law School of Business
P.O. Box 20
FI–53851 Lappeenranta
Finland

Professor Joakim Wincent
Luleå University of Technology
Department of Business Administration and Social Sciences
SE–97187 Luleå
Sweden

| **Julkaisija** | **Julkaisupäivämäärä** | |
|---|---|---|
| Vaasan yliopisto | Joulukuu 2010 | |
| **Tekijä(t)**<br>Henri Hakala | **Julkaisun tyyppi**<br>Artikkelikokoelma | |
| | **Julkaisusarjan nimi, osan numero**<br>Acta Wasaensia, 232 | |
| **Yhteystiedot**<br>Vaasan yliopisto<br>Kauppatieteellinen tiedekunta<br>Johtamisen yksikkö<br>PL 700<br>65101 VAASA | **ISBN**<br>978–952–476–324–0 (nid.)<br>978–952–476–325–7 (pdf) | |
| | **ISSN**<br>0355–2667, 1235–7871 | |
| | **Sivumäärä**<br>194 | **Kieli**<br>Englanti |

**Julkaisun nimike**
Strategisen orientaation konfigurointi



**Tiivistelmä**

Yritykselle ominaisia, yleisiä toimintatapoja, joilla pyritään parantamaan ja ylläpitämään suorituskykyä, kutsutaan usein strategiseksi orientaatioksi. Vaikka aiempi tutkimus aiheesta on laajaa, se on hajanaista eikä yleensä tarkastele ilmiötä monesta näkökulmasta samanaikaisesti.

Tutkimuksen päätavoitteena on yhdistää aiemman tutkimuksen näkökulmia ja konfiguroida yrityksen strateginen orientaatio tavalla, joka mahdollistaa sen paremman käytön yritysten arvioinnissa ja kehittämisessä. Tutkimuksessa strateginen orientaatio nähdään markkina- ja teknologiaorientaation, sekä toisaalta yrittäjämäisen- ja oppimisen orientaatioiden yhdistelmänä. Näkökulman mukaan organisaation suorituskyky riippuu paitsi sen positiosta markkinoilla, myös sen resursseista ja erityisesti toimintavoista, joiden avulla se muuntaa resursseja asiakkaille mahdollisimman arvokkaiksi tuotteiksi ja palveluiksi.

Tutkimus koostuu yhteenvedosta, käsitteellisestä tarkastelusta sekä neljästä toisiinsa nivoutuvasta artikkelista. Systemaattista kirjallisuuskatsausta ja teoreettista kehitystä tukevat empiirisen aineiston tilastolliset analyysit. Empiirinen aineisto on kerätty suomalaisista ohjelmisto-alan yrityksistä.

Tutkimus havainnollistaa eri orientaatioiden suorituskykyvaikutuksia ja esittää, että yrityksen strateginen orientaatio tulisi ymmärtää moniulotteisena konfiguraationa. Tulokset osoittavat, että yrittäjämäinen orientaatio mahdollistaa teknologiaresurssien ja asiakastarpeiden tehokkaan yhdistämisen. Useita orientaatioita hyödyntävät yritykset näyttävät tulosten valossa suorituskykyisemmiltä kuin ne jotka keskittyvät vain asiakastarpeiden täyttämiseen. Näyttää myös siltä, että oppimisorientaatio yhdessä yrittäjämäisen orientaation kanssa tukee yritysten kannattavaa kasvua ja uudistumista. Tulokset painottavat erilaisten strategisten orientaatioiden hyödyntämistä samanaikaisesti sekä aidosti holistisen näkökulman merkitystä yritysten johtamisessa ja strategiatyössä.



**Asiasanat**
strategia, strateginen orientaatio, markkinaorientaatio, yrittäjämäinen orientaatio, teknologia-orientaatio, oppimisen orientaatio

| **Publisher** | **Date of publication** | |
|---|---|---|
| University of Vaasa | December 2010 | |
| **Author(s)**<br>Henri Hakala | **Type of publication**<br>Selection of articles | |
| | **Name and number of series**<br>Acta Wasaensia, 232 | |
| **Contact information**<br>University of Vaasa<br>Faculty of Business Studies<br>Department of Management<br>P.O. Box 700<br>FI–65101 Vaasa<br>Finland | **ISBN**<br>978–952–476–324–0 (nid.)<br>978–952–476–325–7 (pdf) | |
| | **ISSN**<br>0355–2667, 1235–7871 | |
| | **Number of pages**<br>194 | **Language**<br>English |

**Title of publication**
Configuring Out Strategic Orientation



**Abstract**

The templates for the ways organizations conduct their business activity and attempt to maintain and improve their performance are frequently described as strategic orientations. However, the prior literature on strategic orientations is fragmented and provides only partial and often disconnected views. Therefore, the main objective of this research is to integrate four different perspectives and configure the concept of strategic orientation in such a manner that it may be better used for the assessment of the strategic elements affecting the performance of organizations. Strategic orientation in this study comprises a constellation of market, entrepreneurial, technology and learning orientations, suggesting that strategic orientation is a combination of the value position of the firm in the markets, its resources, and behavioural patterns relating to how the organization transforms its resources into valuable products and services for its target market.

The study consists of an introductory section, theoretical development and four interconnected articles. The conceptual development of the study, which builds on systematic literature review, is supported by multivariate statistical analysis based on data collected from Finnish software firms.

The results add to our understanding of the interplay and synergetic effects of the subject orientations and suggest strategic orientation should be considered as a configuration of multiple dimensions. The research suggests that the entrepreneurial orientation of the firm may enable effective matching of technological resources and customer needs. Firms combining entrepreneurial, technology and customer orientations appear to perform better than those focusing solely on serving customer needs. Furthermore, organizational learning orientation appears to complement entrepreneurial orientation in supporting profitable growth.

Overall, the results highlight the importance of the simultaneous utilization of multiple orientations, and instigate executives to adopt a truly holistic view towards their work on strategic management.



**Keywords**
strategy, strategic orientation, market orientation, entrepreneurial orientation, technology orientation, learning orientation

# ACKNOWLEDGEMENTS

The journey towards this thesis has been one of the most enjoyable and certainly the most intellectually challenging of my life. However, reaching this point would not have been possible without the kind assistance and support of many other people.

First, I would like to thank Professor Jukka Vesalainen, my supervisor for this work. His analytical and accurate feedback, ability to synthesize and his student-tailored supervisory approach have contributed considerably to my development as a more self-sufficient researcher. I would also like to thank the external examiners: Professor Kaisu Puumalainen (Lappeenranta University of Technology) and Professor Joakim Wincent (Luleå University of Technology) for their critical comments and suggestions of improvements to the thesis.

However, I am most deeply indebted to Marko Kohtamäki, who is not only my co-author on two of the papers and the second supervisor of the thesis, but has become a trusted colleague and dear friend. Without Marko's seemingly boundless support, encouragement and enthusiasm for high quality research, this dissertation would look quite different. Very special thanks also go to my dear friend, Teemu Kautonen, who once planted in my head the idea of writing a dissertation and has been supporting it all the way through. From him, I have also learned many of the skills required in crafting research appropriate for publication in academic journals.

I would also like to thank all the other colleagues who have given me advice over the years and contributed to my development. Seppo Luoto and Niina Koivunen, who have both broadened the scope of my thinking, by introducing me to an entirely different kind of ideas, and Charlotta Sirén, especially for sharing the pain involved in attempting to understand statistics. Also Henrik Gahmberg, who in recruiting me to the staff showed belief in my capability to be a useful part of the department. Furthermore, I wish to thank Riitta Viitala for her continued trust in me and her efforts as the department head to make it a great working environment. I also wish to thank Andrew Mulley for his language consultancy.

Many others have also been supportive, and I sincerely wish to thank all my other colleagues and friends for bearing with me during the past four years. You make it special.

I am also grateful to the Finnish Cultural Foundation, South Ostrobothnia Regional fund and the Foundation for Economic Education, who provided me some of the financial support to produce this dissertation and to make the international conference and research visits along the way. Moreover, the study would clearly not have been possible without the contribution of the respondents to the surveys or critique from anonymous reviewers – thank you.

Finally, yet most importantly, my dear mum, dad and brother, who mean so much to me and have always given me unlimited support in my studies and other endeavours. Thank you for being there.

In Seville, November 2010,

Henri Hakala

# Contents

## Figures in part 1:



## Tables in part 1:

# ARTICLES

[1] Hakala, H. (2010) Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial, and learning orientations. Forthcoming in *International Journal of Management Reviews,* Pending publication schedule. Early view available at Wiley online library http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-2370/ or http://dx.doi.org/10.1111/j.1468-2370.2010.00292.x

[2] Hakala, H. & Kohtamäki, M. (2011). Configurations of entrepreneurial-customer- and technology orientation: Differences in learning and performance of software companies. Forthcoming in *International Journal of Entrepreneurial Behaviour & Research* 17: 1.

[3] Hakala, H. & Kohtamäki, M. (2010). The interplay between orientations: Entrepreneurial, technology and customer orientations in software companies. Forthcoming in *Journal of Enterprising Culture* 8: 3.

[4] Hakala, H. (2010). The Relationship between Entrepreneurial and Learning Orientation: Effects on Growth and Profitability. An earlier version of the paper was presented and published at the proceedings of the FGF 14th Annual Interdisciplinary Entrepreneurship Conference, 21–22.10. 2010, Cologne, Germany.

# 1 INTRODUCTION

## 1.1 Background

In the dynamic business environments of today, the traditional, hierarchical, top-down management approaches have come to be thought ineffective (e.g. Senge 1990; Stacey 2007) Instead of governing the behaviours of the individual actors through formal planning processes or hierarchical procedures, firms rely more on culture, simple rules and strategic direction to guide their actions (Eisenhardt & Sull 2001). These guiding 'templates' for the ways organizations conduct their business activity are frequently described as strategic orientations (e.g. Berthon *et al.* 1999). By definition, strategic orientations are *principles that direct and influence the activities of a firm and generate the behaviours intended to ensure the viability and performance of the firm* (Gatignon and Xuereb 1997).

Prior studies have developed a number of different constructs that attempt to explain the performance from their own particular angles. Concepts such as market and customer orientations argue that organizations should adapt to the environment by value positioning themselves correctly in the markets through superior understanding of their customers and competitors. (e.g. Day 1994; Narver & Slater 1990) Technology, product and production orientations essentially approach the dilemma of adaptation from the internal angle and link closely with the resource-based view of the firm by suggesting that the performance is a result of the development of unique resource combinations that result in new technologies, products or processes that enable firms to gain a competitive edge over the competition. (E.g. Gatignon and Xuereb 1997; Grinstein 2008; Hult *et al.* 2004)

The entrepreneurial and learning orientations approach the problem of adaptation from a different angle again, suggesting that it is the adoption of certain kinds of behaviours (rather than technological resources or a position in the market) that enables firms to adapt and succeed. The entrepreneurial orientation proposes that innovative and proactive behaviours (termed innovativeness and proactiveness here), along with risk-taking behaviours characterise organizations that perform well by constantly changing the dynamics of the marketplace (e.g. Miller 1983; Covin and Slevin 1989; Lumpkin and Dess 1996; Wiklund and Shepherd 2005). Entrepreneurial organizations thus not only adapt to their environment but may be actively shaping it. A learning orientation in turn suggests that organizations with an open mind and commitment to continuously learn (where learning is defined as a change in behaviour) at an organizational level generate a shared vision of the

future that enables them to adapt to changes in their environment (Calantone et al. 2002; Sinkula *et al.* 1997; Baker and Sinkula 1999a; 1999b).

While the prior research has focused on developing orientation constructs and arguing for their effects on performance, the research streams have traditionally ignored the other conceptualizations for the strategic orientation of the firm (Aloulou and Fayolle 2005; Berthon *et al.* 1999; Grinstein 2008; Salavou *et al.* 2004). More recent research, however, has begun to investigate the bipolar links between two simultaneous orientations, and indeed, a fair number of studies have explored the relationship between market and learning orientation, or market and entrepreneurial orientation, as well as the market-technology or product orientation relationships (for an exhaustive listing of articles studying orientation pairs – see Table 1 in article 1). However, the intersection between entrepreneurial and learning orientations is little studied, despite the fact that both have been identified as critical ingredients in the strategic posture of firms in their respective streams of literature. In addition, there is only fragmented evidence (and then it is mostly conceptual) on the role of entrepreneurial orientation in combining the market and technology oriented behaviours, and there remains a general dearth of studies investigating the relationship between entrepreneurial, market and technology orientation within the same study. Thus, only a small number of studies are taking on the more complex, three or four dimensional ideas, attempting to configure the strategic orientation of the firm in a more holistic manner. Yet, strategy and strategic management is a holistic endeavour and the focus on one functional area or school of thought cannot adequately reflect the complexity of the process in which managers attempt to direct and influence the activities in their firms (Fritz 1996).

Furthermore, previous studies have highlighted the importance of investigating the relationships between different strategic orientations (Grinstein 2008) and early on, established that organizations that focus exclusively on implementing a single orientation tend to perform poorly in the long run (Pearson 1993). Balancing several orientations tends to result in better performance by the firms (e.g. Atuahene-Gima & Ko 2001, Bhuian *et al.* 2005). The meta-analytic study by Grinstein (2008), on 135 effects from 77 independent samples, concludes that firms balancing multiple orientations appear to perform better, but that there is limited literature on the relationships between orientations. Recent studies (e.g. Aloulou and Fayolle 2005; Grinstein 2008; Li *et al.* 2008) suggest that research should focus on the "study of the various combinations of strategic orientations that firms can pursue in different situations" (Grinstein 2008: 126).

Therefore, the present dissertation concentrates on addressing the identified gaps in prior research, namely the need for research on configurations of multiple orientations, investigation of their relationships and effects on organizational performance. Prior research has mainly focused on investigating a single orientation together with various contingent factors. In addition, studies operating with multiple orientations have often considered the different orientations as incompatible opposites, alternatives or attempted to position one orientation as superior to the others. While the different orientations may be seen as competing explanations (e.g. Noble *et al.* 2002), this study considers them all plausible and, to a degree at least, complementary. Accordingly, the dissertation follows on from the more general developments in management theory that suggest dichotomous models (such as market vs. product) towards simultaneous application of, apparently contradictory, orientations. By questioning the traditional dichotomous approach towards orientations and adopting an integrative, holistic view, the study positions itself in the configuration-theoretical stream of strategy literature (Minzberg and Lampel 1999).

In general, configuration denotes a multidimensional constellation of conceptually distinct characteristics that commonly occur together (Meyer, Tsui and Hinings 1993). Along with this view, strategic orientation is viewed in this study as a constellation of market, entrepreneurial, technology and learning orientations. This essentially converts to a view in which strategic orientation is seen as a combination of the value position of a firm in the markets, its resources and behavioural patterns relating to how the organization transforms its resources into products and services to suit the marketplace.

Overall, this study contributes by addressing some major gaps in prior literature investigating the relationship between multiple orientations. The relationships between the orientations studied here, have hardly been touched upon in prior literature, let alone considered as complementary mechanisms functioning together. The results add to our understanding about the interplay and synergetic effects of these orientations and suggest strategic orientation should be considered as a configuration of multiple dimensions.

## 1.2 Objective and research questions

Inspired by the identified gaps in the research, this dissertation sets out to investigate the strategic orientation of the firm in terms of configuration. While it is also important to understand the relationships between constructs forming the configu-

ration of orientations – this doctoral dissertation sets about configuring out[1] the strategic orientation of a firm.

The assumption underlying this task is that any of the existing conceptualizations of various orientations may be valid, but in approaching the topic of strategic orientation from their respective and restricted starting points, they provide different, partial views and represent different dimensions of the broader, strategic orientation construct. Therefore, the *main objective of this dissertation is to configure the concept of strategic orientation* in such a manner that it may be used for the particular purpose of assessing the strategic elements affecting the performance of organizations. Performance in this study is viewed through subjective, perceptual measures of satisfaction with the performance, mainly using profitability and growth related measures and performance in comparison to competitors. Furthermore, the aim is to combine the views on strategic orientation from different and often disconnected streams of literature *and develop a framework that integrates the different orientations.*

These objectives signal a holistic view of strategic orientation that is addressed through a combination of four articles and the introductory discussion here. Both the form of the configurations of the different orientations and the relationship between their constituent elements are investigated.

The first article sets the scene and formulates the research agenda for the empirical studies. It uses a systematic review method (Tranfield *et al.* 2003) and analyses the prior literature that has touched upon the relationship between different orientations. The article also identifies a number of major gaps in the extant literature, and develops further research suggestions that are addressed in the three empirical papers. The empirical studies focus on the technology, customer, learning and entrepreneurial orientation and their relationships. The introductory part of the study takes a synthetic view and attempts to reconfigure the idea of strategic orientation in such a manner that it may be usefully applied in management research and practice alike.

---

[1] By definition, "configuring" refers to a process in which something is set up or arranged in such a way that it is ready for operation for a particular purpose. It is not commonly used to form a phrasal verb with 'out', but "figuring out" is a common expression. The first impression should be of "figuring out', which in turn – connotes discovering a way to do something. Thus, the idea of the title of the dissertation is to give the impression that the study is going to help the reader to understand strategic orientation, what it means, and how it may be constructed – arranged in such a way that it may be used and understood.

The more specific research questions for the individual articles are:

*What is known about the relationships between entrepreneurial, market, technology and learning orientations? What are the research gaps? (Article 1)*

*What configurations of entrepreneurial, customer and technology orientation are viable? (Article 2)*

*What is the relationship between entrepreneurial, customer and technology orientations and what are their effects on performance? (Article 3)*

*What is the relationship between entrepreneurial and learning orientation and their effects on performance? (Article 4)*

## 1.3 Structure of the dissertation

This dissertation is organized into five chapters that precede the reprints of the four individual articles in the second part of the dissertation. The introductory section here presents the background, and establishes the need for this research as well as the main objectives of the study. The next chapter briefly introduces the theoretical basis, positions orientations against some other strategy research concepts and briefly introduces the study constructs. The third chapter attempts to clarify some of the methodological choices and assumptions made in the study. The discussion on the results of this study is found under the title "Configuring the strategic orientation". The discussion attempts to model strategic orientation as a configuration of entrepreneurial, market, technology and learning orientations, and positions the findings made within this study in the context of prior theory. If the reader has no in-depth knowledge of the multiple orientation discussions, it would be advisable to read through the four articles in the second part of this book before that chapter. The final chapter summarises the contributions made and finally reflects on the limitations and further research directions implied by the study.

The second part of the manuscript consists of reprints of the four original articles, each having their individual implications.

**Table 1.** Focus and results of the articles.

| | **Article 1** | **Article 2** | **Article 3** | **Article 4** |
|---|---|---|---|---|
| **Focuses on:** | Prior literature on multiple orientations | Configurations of entrepreneurial, customer and technology orientations | Relationship between entrepreneurial, customer and technology orientations | Relationship between entrepreneurial and learning orientations |
| **Results in:** | Identification of different approaches to the interplay of orientations.<br><br>Identification of the research gaps for the empirical articles. | Identification of viable configurations of entrepreneurial, customer and technology orientations in Finnish software industry. | Understanding of the relationships between entrepreneurial, customer and technology orientations. | Understanding of the mechanism of entrepreneurial and learning orientations on dimensions of performance. |

# 2 THEORETICAL BACKGROUND

This chapter positions strategic orientation in relation to some other strategy constructs and defines the main study constructs. While *article 1* provides an in-depth, conceptual review of the multiple strategic orientation literature, the latter part of this chapter settles for presenting only a tabular summary and a synthesis on the current state of knowledge.

## 2.1 What is strategic orientation?

In this dissertation, strategic orientations are viewed, in line with Gatignon and Xuereb (1997), as principles that direct and influence the activities of a firm and generate the behaviours intended to ensure the viability and performance of the firm.

### *2.1.1 Strategic orientations and strategy*

The strategy of the firm is one of the central concepts in management research and there are numerous different definitions and ways of thinking about strategy. A textbook definition of strategy is that it "defines and communicates what an entity creates, by whom, how, for whom and why it is valuable" (Huff *et al.* 2009: 21). While the performance of a firm may also be determined by factors beyond the control of its management, the organization's strategy has become one of the major tools that managers believe can influence the performance of the organization they are managing.

Porter (1980) suggested that the performance of firms is dependent on the choice of industry, and that different industries attract different levels of performance. This idea represents a corporate level strategy concerned with the set of businesses the organization engages in. In contrast, the functional level of strategy is interested in how to maximise resource productivity within a specific function. In between those two, business level strategies, (and strategic orientations) are concerned with: "how do we compete effectively in each of our chosen product-market segments" (Venkatraman 1989: 10).

Porter's (1980) famous classification of generic strategies discusses business level strategy on the cost efficiency – product differentiation axis, and may also be seen to represent a conceptualization of alternative strategic orientations. Another classic, from Miles and Snow (1978) makes a similar classification of strategy types, but based on the decision-making processes used in organizations. Miles and

Snow (1978) suggest that there are three viable strategy types. *Prospector*, *Analyzer* and *Defender* strategies may be found within any industry and are superior strategies due to the consistency found between their processes in solving entrepreneurial (roughly, their product-market domain) engineering (operational, production related problems) and administrative (organizational) issues. Both Porter (1980) and Miles & Snow (1978) have become accepted and provide useful simplifications representing strategic orientation. However, both approaches ignore the possibility of firms combining the different orientations simultaneously, although the *Analyser* strategy presented by Miles & Snow represents the midpoint between *Defender* and *Prospector* types (Doty *et al.* 1993). Both also experience some measurement problems in determining the category under which an organization should be classified (Combe 2006). Strictly speaking, neither Porter nor Miles & Snow referred to their concepts as strategic orientations, although many writers (e.g. Wang 2008) have later referred to them as such.

It appears that Venkatraman (1989) first used the term strategic orientation for his measurement scale of a particular strategy construct. He defines strategic orientation through the dimensions of *strategic aggressiveness, analysis, defensiveness, futurity, proactiveness* and *riskiness* and suggests that the strategic orientation of an organization may be measured through managerial perceptions and beliefs on the organizational processes on these six dimensions. For Venkatraman (1989), strategic orientation was a device to assess and measure the key dimensions of business level strategy. Venkatraman (1989) focuses on general strategic process traits, and many of the dimensions relate to the concept of entrepreneurial orientation (entrepreneurial vs. conservative strategic posture) as introduced by Miller (1983).

However, since the seminal contribution by Venkatraman, strategic orientation has acquired a meaning extending beyond the initial construct. Strategic orientation is commonly used as generic, umbrella term to describe a number of different constructs such as market orientation, entrepreneurial orientation, learning orientation and technology orientation. Each of these orientations suggests a different mechanism for adaptation and thus, responds differently to the question of how firms should compete within their chosen product-market segments.

### *2.1.2 Strategic orientations and (Dynamic) Capabilities*

Different orientations stem from different views on strategy, however, the concept of dynamic capabilities, commonly associated with the resource-based view (RBV) of the firm does share a number of similarities with the concept of strategic orientation. Therefore, while this dissertation is not about dynamic capabilities

as such, this strand of theory comes so close that it is necessary to briefly visit its relationship to orientations.

Some writers view orientations explicitly as 'dynamic capability' (e.g. Santos-Vijande *et al.* 2005; Zhou *et al.* 2005). The definition of dynamic capability as the *"firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments"* (Teece *et al.* 1997: 516) certainly could accommodate the idea of orientations. The RBV argues that resources that are simultaneously valuable, rare, difficult to imitate and imperfectly substitutable are the source of competitive advantage, (e.g. Barney 1991, 1995) and dynamic capabilities govern the changes in these firm specific, unique resource bundles (capabilities) (Ambrosini and Bowman 2009).

One of the criticisms of the concept of dynamic capability is that it is difficult to measure (Easterby-Smith, Lyles and Peteraf 2009). Indeed recent reviews (Ambrosini and Bowman 2009; Barreto 2010) note that there is a limited number of properly operationalized empirical studies that have been conducted on dynamic capabilities, and investigations tend to be case-based and qualitative. (Obviously, there would be a philosophical discrepancy in making a quantitative study into something that is defined as unique and firm specific). However, recent studies have attempted to clarify the difference between capabilities and dynamic capabilities and to redefine dynamic capabilities in a manner that would permit them to be observed across firms and also to be measured quantitatively (Barreto 2010).

Wang & Ahmed (2007) define dynamic capabilities as "a firm's behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage" (p. 35). Wang & Ahmed (2007) also clarify that dynamic capabilities are "higher" order capabilities that "emphasise a firm's constant pursuit of the renewal, reconfiguration and re-creation of resources, capabilities and core capabilities to address the environmental change". The main difference with Teece *et al.* (1997) lies in the hierarchy; dynamic capabilities guide the development of other capabilities and resources rather than being a 'subset' of the capabilities. The difference may appear insignificant, but Wang & Ahmed (2007) conceptualize dynamic capabilities "in such a way that the common features are identifiable and measurable, although the processes in which dynamic capabilities are embedded may be specific to the firm and the industry" (p. 43). From this perspective, orientations *are* dynamic capabilities, and thus serve as measurements of the kind

of dynamic capabilities that come into view across firms, rather than those that are unique to individual firms.

However, dynamic capabilities are about intentional change in the resource base (or in the "lower level" capabilities) of the firm (Ambrosini & Bowman 2009) whereas although strategic orientation may also be about intentional change in the resource base, it may also be about intentional change in other aspects, or in dynamic capabilities themselves. In other words, as different orientations stem from different conceptions of strategy, they may also be about changes (directions) in market positions, entrepreneurial posture or learning processes. This leads to the conclusion that the orientations approach is not locked together with the resource-based view of the firm, but has more flexibility in terms of the underlying view of strategy.

Despite the fact that a number of scholars appear to have contributed to both the dynamic capabilities and orientations literature, the link between these two views has not been made very explicit. However, it is suggested here that strategic orientations, are not 'independent' of the resource-based view or dynamic capabilities of the firm – but generally do a slightly more universal, parsimonious job in reflecting the various strategic directions implemented by a firm to create the behaviours contributing to superior performance. It appears sensible to perceive dynamic capability and orientation as the same – but possibly reserve the term orientation for quantitative measures, and the term, dynamic capability, for qualitative approaches to assessment.

### *2.1.3 Strategic Orientation, culture and practice.*

Some researchers see orientation as a representation of an organization's adaptive *culture* that steers its interaction with its environment (Noble *et al.* 2002). This dissertation treats orientations as adaptive mechanisms, not as elements of culture, but acknowledges that company culture may be manifested through its orientation (Braunscheidel and Suresh 2009). Again, definitions vary, but what is meant here by this difference relates to the idea that culture is seen to *characterise* the set of attitudes, behaviours values and goals of an organization. Culture is seen as relatively stable, and changing it often beyond managerial control (though not entirely). However, orientation as an adaptive mechanism is a *set of rules that is designed and learned to accomplish* a specific outcome; behaviours that assist in coping with different environments. Because these principles are designed and learned, they may be more readily changed and thus managerially 'used' to steer the activities of the organization. While the orientation of the firm is also difficult and slow to change, and the difference from cultural definition is minor, this is a

distinction this study makes, so as to underline that changing orientation is somewhat easier or quicker than changing the entire organizational culture. In this respect, strategic choice theory, grounded as it is on the assumption that managerial decisions about how organizations respond to environmental challenges are essential determinants of the organizational performance (Child 1972), underlies the strategic orientation enquiry.

Yet another angle is provided by scholars that suggest that strategies emerge from (e.g. Minzberg and Waters 1985), or are visible in operational practices, thus making strategies something that people do (e.g. Hambrick 2004; Jarzabkowski 2004; Whittington 2006). The 'strategy as practice' research has offered a term, 'strategizing', to describe the ongoing process of discovering the purpose, creating and using resources and guiding activities, and suggested that it is more effective than a one-time only process in which management determines strategy. While this dissertation does not adhere to the 'strategy as practice' approach, it is acknowledged that while managers do craft or attempt to compose strategies that result in certain strategic orientations and to guide organizations, the strategies are also simultaneously visible, realized or emerging from the activities of the organizational members. Viewed from this perspective, strategic orientation at the organizational level emerges from the activities of strategizing.

There are also some interpretations of "strategic orientation in practice" that consider orientation at an individual, rather than an organizational level and investigate cognitive models of managers (e.g. Hitt, Dacin, Tyler and Park 1997; Combe 2006) While these are interesting developments in understanding the decision-making behaviour of managers, this study considers strategic orientations at an organizational level.

### *2.1.4 Strategic orientation – content and process*

Within strategic management literature, many scholars distinguish between strategy content and strategy process perspectives. The content perspective argues that competitive advantage results from the content of strategies that relate to competitors such as uniquely valuable resource combinations (Resource-Based View) or positions in the markets (e.g. Porter 1980) In turn, the process perspective argues that competitive advantage results from processes such as analysis and planning, learning and development, or entrepreneurial behaviours. However, some others may not make such distinctions (e.g. Minzberg and Lampel 1999) and findings (e.g. Combe 2006) suggest that managers in practice also integrate these views and perceive strategy as a combination of processes and content.

Some prior concepts on strategic orientation have focused only on the domain of the strategy, attempted to explain strategy through *what strategy should be about* – understanding of the customers or understanding the utilisation of resources such as technology. On the other hand, entrepreneurial and learning orientations have attempted to explain strategy through *how firms should act*. In the context of this dissertation, technology and customer orientations are seen to relate more to the content of strategy suggesting that the strategy of software companies should include a focus on utilising high technology and understanding customer needs. In turn, learning and entrepreneurial orientation clearly relate to the processes of how strategies are implemented or how organizations go about making their strategies.

Consequently, this study conceptualizes the strategic orientation of the firm through the idea that successful firms need to 1) develop technological and other resources, 2) serve and satisfy their customers 3) seek new opportunities to deploy resources and satisfy more customers and 4) continuously learn to become more efficient and effective in all these aspects.

Strategic orientations investigate the business level strategy of firms competing under the prevailing circumstances and preparing for the future challenges presented in their chosen line of business. Strategic orientations do little to guide the corporate level strategy decisions in terms of which industries or businesses the firms should be involved in.

## 2.2 The different orientations – the concepts

The empirical papers utilise a number of measurement constructs that are detailed within the articles themselves. However this section briefly revisits the main concepts used in the papers.

### *2.2.1 Market and customer orientation*

Market orientation has long been one of the cornerstones of marketing literature and can be viewed as the culture or activities of the organization that effectively create the behaviours required for superior performance (Deshpandé et al. 1993; Kohli and Jaworski 1990; Narver and Slater 1990; Slater and Narver 1995, 2000). Sometimes market orientation is also referred as the "implementation of the marketing philosophy" (Kohli and Jaworski 1990). Arguably, the idea of market orientation aligns with the ideas of those strategic management writers (e.g. Por-

ter) who suggest that the firm's position in relation to competitors in the customer's mind is the key to competitive advantage.

A popular conceptualization (Narver and Slater 1990; Slater and Narver 1995) splits market orientation into elements of customer and competitor orientation, and sees examples of inter-functional coordination in putting the market information to use. Customer orientation is thus a more streamlined subset of the broader market orientation concept, focusing on the achievement of competitive advantages through understanding customers and what customers value. While the measures for customer orientation do not separately account for competitor information, essentially, understanding and satisfying customers requires this, as customers do compare the value proposition of the firm in relation to other alternatives.

There is also a closely related term, marketing orientation, referring to the investment in marketing activities and people, including a firm's adoption of customer orientation and the general concept of marketing (Morris and Gordon 1987). The measures of marketing orientation tend to be more function-based, but prior research suggests that the measurement scale used appears to have no significant effect on the market orientation / performance link (Kirca *et al.* 2005). Given that the focus of this study is not to investigate measurements in detail, it chooses an inclusive approach in which market, customer, and marketing orientation are all treated as referring to the same idea about value creation, through the ability of the company to understand and make use of the knowledge it holds on its customers and markets. While the broader market orientation measures also contain the process-view of strategy (the dimension of inter-functional coordination), customer orientation measures focus on the content of strategy, that is, what the strategy should take into account.

### *2.2.2 Technology orientation*

Technology orientation, and the closely related terms of innovation and product, orientation (Grinstein 2008), refers to a firm's inclination to introduce or utilise new technologies, products or innovations (Gatignon and Xuereb 1997; Hult *et al.* 2004). It suggests that customer value and the long-term success of the firm is best created through new innovations, technological solutions, products, services or production processes (Gatignon and Xuereb 1997; Grinstein 2008; Hamel and Prahalad 1991). Customers are unlikely to wish for things they are not aware of (Hamel and Prahalad 1991), therefore product differentiation from the competition or cost advantages in production can be achieved by developing new technologies and adapting existing ones (Gatignon and Xuereb 1997). Technology

orientation may be seen to most closely align with the resource-based view of strategy, as it suggests that technological resources (in a broad sense), when uniquely combined, form the basis of competitive advantage.

### *2.2.3 Entrepreneurial orientation*

Entrepreneurial orientation is a strategic orientation that captures the specifically entrepreneurial aspects of firms' strategies (Bhuian et al. 2005; Covin and Slevin 1989; Lumpkin and Dess 1996; Hult *et al.* 2004; Wiklund 1999; Wiklund and Shepherd 2005). The entrepreneurial tendencies toward risk taking, innovativeness and proactiveness are considered as central to entrepreneurial orientation (Miller 1983; Covin and Slevin 1989). The main proposition of entrepreneurial orientation is that organizations acting entrepreneurially are better able to adjust their operations in dynamic competitive environments (Covin and Slevin 1989). Entrepreneurially-oriented organizations change and shape the environment and are willing to commit resources to exploit uncertain opportunities. They explore new and creative ideas that may lead to changes in the marketplace and do so proactively ahead of the competition in anticipation of future demand. This kind of better adjustment and shaping of the environment should have positive effects on firm performance (e.g. Hult *et al.* 2004; Keh *et al.* 2007; Wiklund 1999; Wiklund and Shepherd 2005). Essentially, the entrepreneurial orientation represents the entrepreneurial strategic posture, the *how an entrepreneurial organization competes*.

Entrepreneurial orientation has some links with the Miles & Snow (1978) typology mentioned earlier. Covin & Slevin (1989) suggest that organizations scoring high on entrepreneurial orientation roughly approximate to firms representing prospectors in the Miles & Snow typology, while at the other end of the continuum, conservative firms (with a low level of entrepreneurial orientation) correspond to reactor firms. Entrepreneurial orientation is essentially a growth orientation (Covin, Green, Slevin, 2006), referring to processes and practices that lead to 'new entry' – that is start of new business, entering new markets or introducing new products into existing markets (Lumpkin & Dess 1996).

The roots of entrepreneurial orientation can be traced to the strategic choice perspective on strategy (Lumpkin and Dess 1996), thus essentially, environment alone does not determine the success of the corporation, but strategic decision making also has an impact on it. However, entrepreneurial orientation literature does acknowledge that environmental characteristics, as well as resources and other organizational factors are contingent to the EO-performance relationship.

The entrepreneurial orientation represents an entrepreneurial strategy making process and shares an interest with technology orientation in terms of interest in value creation for dynamic environments in particular. Yet, while technology orientation is about resources to develop new products and technologies, entrepreneurial orientation is related to more generic processes of adaptation, proactiveness, innovativeness and risk taking, that may relate to the development of new technologies or products, but equally to entering new markets or seeking new customers that may be satisfied with the existing resources. Thus entrepreneurial orientation links naturally with both technology and customer orientations in dynamic environments.

### *2.2.4 Learning orientation and organizational learning*

Learning is viewed as the development or acquisition of new knowledge that has the potential to influence behaviour (Huber 1991). In this study, learning orientation corresponds to this definition of learning and is viewed as the organization's propensity to create and use knowledge, and the processes it uses to do so (Baker and Sinkula 1999a; 1999b; Sinkula *et al.* 1997) in order to attain competitive advantage (Calantone *et al.* 2002). Learning orientation is conceptualized through the dimensions of shared vision, open-mindedness and a commitment to learn (Sinkula *et al.* 1997). The learning orientation measure utilised captures a general tendency toward organizational learning. The establishment of a learning orientation does not assure a stance on, or measure of, the extent to which firms engage in different types of learning, such as adaptive or generative learning (Wang 2008). However, it may be seen to correspond more with single loop, incremental learning, or organizational satisfaction with its 'theory in use' (Sinkula *et al.* 1997) and thus only influences how much exploratory learning the organization needs to engage in.

A more rigorous view of learning assumes that it has only occurred when it has resulted in new behaviours or value creation (Argyris and Schön 1978). In this study (article 2) the concept of organizational learning is an outcome of experimentation, learning from past experience and knowledge sharing (Garvin 1993), and is interpreted here in a way that represents the more rigorous view.

### *2.2.5 Organizational performance*

The interest in organizational performance is essentially one of major interests of strategy literature, and performance has been perceived in many ways. Researchers generally agree that organizational performance is a multidimensional con-

struct and recognise that different organizational strategies and activities may have different effects on the dimensions of organizational performance (e.g. Ray *et al.* 2004, Lumpkin & Dess 1996). Performance may first be divided into operational and organizational performance measures, and then organizational performance may be further divided into dimensions of accounting returns, stock market returns and growth (Combs, Crook & Shook 2005). The measures for these dimensions tend to be further classified into objective and subjective measures. The 'objective' indicators include for example profit in comparison to turnover, assets or investment, which may be compared with that of competitors within the industry, or left as 'absolute' numbers. Growth is often measured as growth in profits, sales or number of employees, while the most common stock market success measures are stock returns and market-to-book-value ratios. (Combs et al. 2005)

The subjective measurements are similar, but do not employ actual accounting or database numbers but instead survey the respondent's perception of, or satisfaction with, different elements of performance. The respondent may be asked to evaluate their organization's performance against its relevant competitors (e.g. Dess and Robinson 1984). This assumes that the respondent, usually a managing director, is the best source of information on the relevant competition and due to his/her position within the industry, is able to evaluate the most relevant competitors and their performance better than the researcher could. Alternatively, respondents could also be asked about their satisfaction with elements of performance (e.g. Gupta and Govindarajan 1984). Clearly, subjective measures are also the only option in the case of small companies, whose accounting figures may not be available. However, there is a debate on whether subjective performance measures are appropriate, yet, studies seem to indicate that objective and subjective measures are highly correlated (Dawes 1999; Murphy and Callaway 2004), although they should be considered separate constructs.

This study adopts a fairly narrow view of performance, and in the empirical studies considers only the most commonly used elements of performance (Combs *et al.* 2005), namely growth and accounting returns (profitability). Even this sort of organizational performance is highly subjective and a relative term, and while 'absolute' numbers on growth and profitability might be obtained, the accounting figures from small businesses must be read in light of the numerous possibilities to control and influence the amount of officially reported profit. Especially in the dynamic industries, such as software, they may give a misleading picture. High technology companies may invest their profits back into the business, or their growth may be highly cyclical. Thus, the relativity of performance is taken into account in the measures and organizational performance is considered to be

reflected in the management's satisfaction with the results of their organizations. This type of approach is a customary and arguably even preferable (Lyon *et al.* 2000) approach for research into performance of small and medium-sized businesses.

### *2.2.6 Different viewpoints on strategic orientation*

In Figure 1 below, the different orientations are depicted to represent different viewpoints on the strategic orientation of the firm. They are not the same, but they do investigate and attempt to measure the performance generating activities of the firm from different angles, and therefore, taking these viewpoints together, we can obtain a more multifaceted view, and thus a better assessment of the firms' strategic orientation

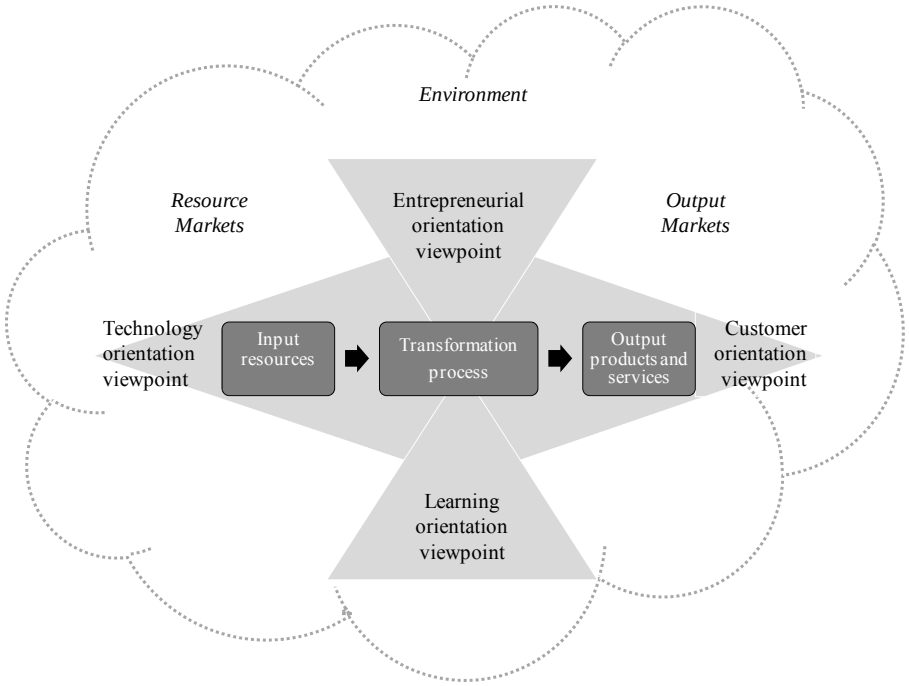



**Figure 1.** The viewpoints provided by the different orientations contextualized with the idea of organization as an open system.

Figure 1 also depicts the viewpoints contrasted with the open systems model of organization. It has its roots back in the mid-19th century and may be seen as an attempt to integrate and avoid the weaknesses of both the traditional mechanistic or human relations views of the organization The traditional mechanistic or bureaucratic views (e.g. Taylor, Weber) were criticised for focusing too strongly on structures and for viewing organizations as machines. The human relations or organizational behaviour schools of thought (e.g. Mayo, Maslow, Herzberg and

McGregor), pay more attention to behaviours, motivation and leadership but were seen as ignoring technology and structures (Jackson 1991). Systemic thinking at the time, considered both of these models as incomplete, (but not necessarily inadequate) because their partial views were detached from the whole and set out to integrate and develop a more holistic view.

By attempting to integrate these views, the open systems thinking builds on the idea that organizations attempt to control and reduce the uncertainty related to both external and internal environments, but acknowledge that full control of either environment or the organization itself is not possible. Therefore, organizations need to adjust their own structures and behaviours so that they live within the environment[2]. As an example, Barnard (1938), suggested the importance of maintaining the balance within the organization by attempting to keep the amount of 'satisfactions' larger than 'dissatisfactions. Selznick (1948) highlighted the importance of interaction with the environment and described organizations as adaptive organisms. The "equilibrium function" – model proposed by Parson and Smelser (1956), extended these ideas suggesting that organizations need to take care of the balance between adaptation, achieving their goals and coordination of their own operations. While the "organization as open systems" was finally launched by Katz and Kahn (1966), linking the ideas together with the general systems theory.

The transformation process in the middle of the figure is often divided into five subsystems. These are a production/technical system, systems that support that production/technical system (e.g. sales), maintenance systems (how the organization works), adaptive systems, and the management system. The function of the management system is to control and coordinate the other subsystems to achieve a state of balanced stability and change. The strategic orientation of the firm relates

---

[2] According to Jackson (1991), there are nine main points in open systems thinking. Energy is brought into the system from the environment (1), thus resources are imputed, transformed into something else (2), and outputs, products and services exported back to the environment (3). These exports enable the input of new resources, and the system may go on functioning (4), as long as there is negative entropy (5), systems live off their environments, that is, the system is able to absorb more energy than it consumes by transforming it into outputs. (The difference between the value of outputs and inputs is commonly called 'performance'). In addition, open systems continuously collect and code information from their environment (6), enabling them to adapt to their environment and maintain 'dynamic homeostasis' (7), a kind of balanced state of stability and change. The model also suggests that open systems attempt to specialize and differentiate (8), while the same end result may be achieved in several different ways or the same resources may be used for achieving a number of different end states (equifinality – multifinality) (9).

mainly to this managerial subsystem, thus, it needs to be a mechanism that attempts to control and coordinate the adaptation to the other subsystems.

If we compare the different orientation viewpoints against the subsystems that management needs to coordinate, the technology orientation associates with the technical subsystem of products and production. Similarly, the customer orientation can be associated with the supportive system of finding the markets for the products the company produces. The entrepreneurial and learning orientations may be seen as adaptive and maintenance systems, representing the ways in which the stable state of the organization is maintained and adjusted as necessary. While the chosen orientations cannot cover each and every area, they can be seen to represent the main differing points of view that management must take into account.

In summary, and using more commonplace terminology, while market orientation mainly concerns the external environment of the organization, its customers, and competitors and in turning market knowledge into valuable actions – technology orientation approaches the same dilemma of customer value from an internal departure point. New technologies, products and services are seen as key to creating customer value and providing competitive advantages for the firm. Entrepreneurial orientation further suggests that certain types of behaviour or processes – namely the innovative, proactive and risk-taking propensities of the firm – drive successful development. The learning orientation viewpoint takes a general view suggesting that learning, (be it from markets, or with regard to technology or processes) turns recognised opportunities into actions and is the key enabler of a firm's performance. Prior studies have suggested that certain relationships between these strategic orientations may provide organizations with sustained competitive advantage (Hult *et al.* 2004) and that firms balancing several orientations perform better (Atuahene-Gima and Ko 2001; Bhuian *et al.* 2005; Grinstein 2008). Performance is a multidimensional, relative and subjective construct that relates to managerial insight about the outcomes of the organization in relation to the goals they have set.

## 2.3 Prior studies investigating the relationship between Strategic Orientations

### *2.3.1 Multiple orientation studies*

Thousands of studies have been published on different strategic orientations, but the studies tend to concentrate on the role of a particular orientation, its direct effects and to argue for the supremacy of their respective viewpoints. Despite decades of research conducted in the different streams of orientation literature, only a limited number of studies analyse the interactions between strategic orientations; or attempt to combine the different viewpoints (Li *et al.* 2008; Grinstein 2008), thus, little is known about the interrelationships between market orientation, technology orientation, learning orientation, and entrepreneurial orientation (Grinstein 2008). The systematic literature review (reported in article 1) identified 67 published studies (1987–2010) that appear relevant to the question of the relationship between strategic orientations. While the review article focuses on the more conceptual discussion on the relationship between orientations, this section contends to report the main findings of these studies in Table 2, and briefly to summarise the current state of knowledge as implied by the prior studies.

**Table 2.** Prior studies investigating the relationship between different orientations.

| Study | The focus of the study | Data | Results / relationship of orientations in the study |
|---|---|---|---|
| Aloulou and Fayolle (2005) | The importance of the EO as conciliator of other strategic orientations (market-, technology- and stakeholder orientations) | Conceptual | EO combines and blends market-, technology and stakeholder orientations |
| Appiah-Adu and Singh (1998) | Effects of innovation orientation, market dynamism and competitive intensity on the degree of customer orientation. Customer orientation - performance link in SMEs. | 101 UK manufacturing and service firms | Both customer and innovation orientation support performance |
| Atuahene-Gima and Ko (2001) | Develops a concept of an alignment between market and entrepreneurship orientations and investigates its effect on a firm's product innovation. | 181 firms | High EO and High MO create superior performance |
| Atuahene-Gima *et al.* (2005) | The effects of responsive vs. proactive market orientation on product development performance. | 175 U.S. firms | Proactive and Responsive MO have different effects; both are needed for superior performance. Proactive MO and LO is positive, while reactive MO and LO has negative effects. |
| Baker and Sinkula (1999a) | The relationship between learning orientation, market orientation and organizational performance | 250 large firms, 411 responses | LO improves the effectiveness of MO |
| Baker and Sinkula (1999b) | The contribution of learning orientation and market orientation to innovation and organizational performance. | 250 large firms, 411 responses | Both LO and MO needed for successful innovation driven performance. MO/LO have indirect effect on performance through innovations. LO also has direct effect. |
| Baker and Sinkula (2002) | Theoretical explanation of how MO and LO interact to affect product innovation capabilities. | Conceptual | MO facilitates incremental innovation but LO is necessary for radical innovations |

| | | | |
|---|---|---|---|
| Baker and Sinkula (2009) | To investigate if 1)only MO directly and independently influences profitability vs. 2) MO influences through innovation success or 3) if EO is an antecedent of MO. | 88 randomly sampled SMEs in San Diego (US) area | EO and MO are independent constructs that complement each other and affect profitability through innovation success. EO complements MO by instilling a culture that affects the quality and quantity of innovations. |
| Barrett *et al.* (2005a) | The relationships between MO, LO, entrepreneurial management style, organizational flexibility and performance. | Snowball sample of 593 from 50 US organizations | Choose MO, LO or EO depending on industry, sector or market |
| Barrett *et al.* (2005b) | Creativity and its link with LO, MO, EO and organizational flexibility. Creativity's effect on the LO-performance relationship. | snowball sample 267 from 23 US non-profits | MO, LO, EO correlate with each other and with performance |
| Becherer and Maurer (1997) | The relationship of marketing orientation and EO to firm performance and the moderating effects of the environment. | 215 entrepreneur-led US firms | MO and EO correlate, but MO does not affect performance. |
| Berry (1996) | Small high-tech firms evolution from a technology-driven to a market-led management philosophy. | Survey of 257 firms in UK science parks + 30 interviews | Firms develop from TO to MO as they grow |
| Berthon *et al.* (1999) | The relationship between an innovation orientation and a customer orientation and develops a model to resolve tensions between the two. | Conceptual, illustrative cases | By dichotomizing firms focus between customer and innovation orientation, four different strategic modes may be created. |
| Berthon *et al.* (2004) | Model of strategic archetypes combining innovation and customer orientation, develops measurement scale for these types and test the link to firm performance | 124 US executives | Different mode (combination of orientation) suits different environments |
| Berthon *et al.* (2008) | Firms adopt a strategic mode of focus, a way of directing efforts towards markets, products, both, or neither. Managers' satisfaction with the strategic mode they have adopted. | 258 South African firms | Different modes (combinations of orientations) have different effects |
| Bhuian *et al.* (2005) | The curve linearity in the moderating effect of entrepreneurship on the relationship between MO and performance | 231 not-for-profit hospitals | MO most effective with moderate levels of EO |
| Celuch *et al.* (2002) | The effect of MO and LO on perceived industrial firm capabilities. | 126 metal-part producers | LO enhances MO, both are beneficial |
| Farrell and Oczkowski (2002) | The relationship of MO, LO and organizational performance. | 340 of the top 2000 manufacturing firms in Australia | Firms may have MO without LO or both. MO explains performance better. |
| Farrell (2000) | Which organizational change strategies enhance MO, which management practices facilitate LO, does MO facilitate LO and is LO associated with performance. | 268 of the top 2000 firms in Australia | To create LO is possible through MO, LO's effect on performance is higher |
| Foley and Fahy (2004) | The antecedents of MO. Theoretical framework that uses the market-sensing capability as a way to facilitate understanding of the creation of MO. The relationship between MO and LO | Conceptual | Proposes that LO precedes MO that results in performance |
| Frishammar and Hörte (2007) | MO, EO and performance in new product development. | 224 mid-sized manufacturing firms in Sweden | MO and innovation dimension of EO support new product performance |
| Fritz (1996) | The significance of the MO as part of the overall corporate management | 144 industrial firms in West Germany | MO is one of the key dimensions of corporate management, along with the production/cost orientation and the employee orientation. |

| | | | |
|---|---|---|---|
| Gao *et al.* (2007) | The effects of demand uncertainty, technological turbulence and competitive intensity on the links between customer, competitor and technology orientations and performance. | 408 brands in China | Customer orientation improves performance when demand uncertainty is low but harms performance when demand uncertainty is high. Competitor orientation beneficial in all competitive environments. TO Performance shifts over the range of technological turbulence from negative with a low level of technological turbulence to positive if turbulence is high. |
| Hult *et al.* (2004) | The relationship of MO, EO and LO as antecedents of innovativeness, and the further relationship between innovativeness - business performance in the context of varying market turbulence. | 181 large US industrial firms | MO, EO and LO positively affect innovation, the effect of MO is greater under strong market turbulence (no effect under low market turbulence) |
| Izquierdo and Samaniego (2007) | The different effects of market orientation, sales orientation, and product orientation on non-profits economic and social effectiveness | 182 Spanish museums | MO, Product and selling orientations have different effects, Firms should select appropriate orientation depending on their goals |
| Jeong *et al.* (2006) | The role of the customer and technology orientations for successful new product development | survey of 232 Chinese firms + 12 interviews | Customer orientation influences customer acceptance, TO technical performance and profitability. Both needed. |
| Jiménez-Jiménez and Cegarra-Navarro (2007) | How MO can be achieved and maintained. The mediating effect of LO on the MO-performance relationship. | 451 Spanish firms | MO generates LO, both useful, MO has indirect effect through generation and dissemination of intelligence (through learning) |
| Kaya and Seyrek (2005) | The relationship between Customer Orientation, TO, EO and performance in different market conditions | 91 manufacturing firms in Turkey | Companies should select TO and/or EO depending on market conditions, Customer orientation appears harmful for firms in the study. |
| Keskim (2006) | The nomological relations among market orientation, learning orientation and innovativeness in SMEs of developing countries | 157 small firms in Turkey | MO affects LO that affects innovation that affects performance, MO also directly affects innovation and LO also has a direct effect on performance. These interrelationships are important for performance in SMEs |
| Knotts *et al.* (2008) | Compares production and marketing orientation influence the survival rate for small manufacturers wanting to supply the mass merchandiser. | 1,690 small manufacturers | Both production orientation and MO needed. Surviving firms focus more on production than MO. Non-survivors focus more on MO than production orientation. |
| Kropp *et al.* (2006) | The interrelationships between aspects of entrepreneurial, market, and learning orientations, and international entrepreneurial business venture performance | 396 entrepreneurs and 143 managers South Africa. | Adoption of learning, market or an entrepreneurial orientation to the exclusion of the other two may lead to lower performance in early stage international business ventures. |
| Kurtinaitiene (2005) | Develop and test an instrument for measuring the level of marketing orientation in telecom industry | 37 EU mobile operators | There are positive relationships between marketing orientation, learning orientation and enterprise performance in the mobile telecoms industry |
| Lee and Tsai (2005) | The interrelationships between market orientation, learning orientation and innovativeness. | 100 firms in Taiwan | MO and LO affect performance directly but also indirectly through innovation. |
| Li *et al.* (2006) | The relationship among firm orientation, internal control systems and new product development. | 585 Chinese enterprises | EO is beneficial for new product development performance. MO may have even detrimental effects on NPD. |
| Li *et al.* (2008) | The moderating effect of EO on the linkage between MO and firm performance among small enterprises in China | 213 Chinese small firms | MO, alone and in conjunction with innovativeness and proactiveness dimensions of EO, is positively related to firm performance. Risk-taking dimension does not have the moderating effect. |
| Li (2005) | MO, TO and EO influence the formation of managerial networks and the impact of managerial networking on firm performance | 181 foreign-invested firms in China | MO, TO and EO have different effects on managerial networking that has positive impact on performance. |
| Liu *et al.* (2002) | The interrelationships between MO, corporate entrepreneurship (EO), and LO in the context of emerging economies with marketing programme dynamism. | 304 state-owned Chinese companies | State-owned enterprises in China with a high customer orientation, corporate entrepreneurship, or learning orientation attain better organizational outcome. LO mediates the relationships between EO, Customer orientation and marketing program dynamism. |

| | | | |
|---|---|---|---|
| Liu *et al.* (2003) | MO, EO and LO impact on enhancing competitive advantages in emerging economies | 304 state-owned Chinese companies | Organizations may simultaneously have high MO, EO and LO and perform better if all three. High level of MO is related to high level of EO and LO |
| Luo *et al.* (2005) | The moderating role of globalisation activities on the links between market orientation, entrepreneurial orientation, innovative capability and firm performance. | 233 marketing managers and other senior management, China | Both MO and EO affect performance. MO-growth link is strengthened by global partnership and global market-seeking activities. The EO - performance link is strengthened by global product sourcing, but weakened by global partnership activity. |
| Marinov *et al.* (1993) | Marketing approaches in Bulgaria | 523 Bulgarian companies | Bulgarian companies are at the early production orientation stage of development but moving towards the sales orientation stage. |
| Mavondo *et al.* (2005) | The LO, MO and organizational outcomes. The mediating role of human resource practices and innovation in these relationships. | 227 Australian firms. | LO is broader than MO and partly subsumes MO. The LO and MO are distinct but complementary. LO allows organizations to question the assumptions that underpin business practices and prevents market orientation from being reactive. MO is an important antecedent of product innovation, process innovation and administrative innovation. |
| Merlo and Auh (2009) | How EO moderates the interplay between MO and marketing subunit influence. | 112 randomly selected Australian firms. | High level of EO reduces the positive moderating effect of marketing subunit influence on the MO-performance relationship. Firms with high EO do not need influential marketing unit. |
| Miles and Arnold (1991) | Do the marketing orientation and EO represent the same or two unique business philosophies? | 169 firms in furniture industry | MO and EO correlate but do not represent the same philosophy. MO may exist without EO and does not always need EO to support it. |
| Morris and Gordon (1987) | The relationship between EO and marketing orientations of a firm. | 116 US firms | Firms with high EO also have high MO. To maintain EO firms should look into building MO and Marketing operations that support the EO |
| Morris *et al.* (2007) | The relationship of the EO and MO in the development, growth, and sustainability of non-profit enterprises. | 145 US non-profits | Non-profit organizations hold multiple orientations. EO affects MO towards clients but not MO towards donors of the non-profits. |
| Noble *et al.* (2002) | The effects of market orientation, competitor orientation, national brand focus and selling orientation. Mediating effects of learning and innovativeness on the orientation-performance link. | Panel data and documents 1986–97 | Firms with higher levels of competitor orientation, a national brand focus, and selling orientation exhibit superior performance. |
| Paladino (2009) | To examine if the pursuit of both MO and resource orientation (RO) is feasible. Their independent and interdependent effects on financial performance and innovations. | 250 top-performing manufacturing companies in Australia | A balance between RO and MO is important. High MO and high RO leads to highest financial performance. High RO and Low MO leads to highest impact on innovations. |
| Pearson (1993) | Reviews the orthodox treatment of production, product, sales and marketing orientations in marketing texts and suggests changes. | Conceptual | Orientations are not mutually exclusive. The orthodox orientations should be revised to include marketing/customer orientation; accounting/cost orientation; production/ technology orientation; R&D/innovation orientation. Organizations need to be oriented to all four to some extent. |
| Rhee et al. (2010) | The mediating effects of LO in between MO, EO and Innovativeness. | 333 technology intensive, innovative firms in South Korea. | Both MO and EO affect LO, LO affects Innovativeness which in turn, enhances performance. LO mediates the relationship between MO/EO and innovativeness. |
| Ruokonen and Saarenketo (2009) | How EO, LO and MO are manifested when software companies internationalise | Case study of ten small, Finnish software companies | The manifestations of orientations evolve as companies develop and internationalise. EO does not have effect on the success of internationalisation if it is not combined with strong LO and MO. |
| Salavou *et al.* (2004) | The MO and LO as determinants of organizational innovation in SMEs | 150 SMEs in Greece | SMEs with high level of MO and LO in competitive environments are more innovative. |
| Salavou (2005) | Customer and technology orientations' direct effects on product newness and their indirect effects through LO on new product uniqueness. | 150 manufacturing SMEs in Greece | LO, TO and MO together support new product performance (newness and uniqueness) |

| | | | |
|---|---|---|---|
| Santos-Vijande *et al.* (2005) | The effect of MO and LO to the generation of double-loop learning. Relationship between LO, MO and economic and non-economic results. | 272 SMEs in Spain | LO affects MO and establishment of long-term client relationships. Only MO affects performance |
| Schindehutte *et al.* (2008) | The relationship between EO and other strategic orientations. | Conceptual, two illustrative cases | The extent to which the firm adapts TO, MO or EO will influence how it performs. Orientations evolve dynamically resulting in multiple orientations over time. EO underlies other strategic orientations and determines how and if they are manifested. |
| Shaw (2000) | The successful international marketing strategies and headquarter-subsidiary relationships. | 186 German headquarter- UK subsidiary relationships | Product orientation and MO combined are characteristic of successful firms |
| Shipley *et al.* (1995) | How Hungary and Poland have progressed towards the free market economic system. | 1,786 Hungarian and Polish firms | Production orientation inhibits the adoption of marketing orientation |
| Slater and Narver (2000) | Replication of the 1990 study. MO and EO effect on performance. | 53 firms, 106 respondents | MO supports Performance, correlates with EO |
| Suh (2005) | The relationship between e-business activities and strategic orientations. | Archive data from 56 countries. | Innovation orientation attenuates the link between customer orientation and e-customer service |
| Tajeddini (2010) | The effect of EO, CO and innovativeness on business performance in the hotel industry | 156 Swiss hotels | EO, CO and innovativeness simultaneously support business performance in the hotel industry but CO has no influence on innovativeness |
| Tzokas *et al.* (2001) | The relationship between the marketing orientation, EO and competencies. | 246 small manufacturing firms in Greece | Operational competencies require both EO and MO |
| Wang and Wei (2005) | Quality management capabilities, market orientation, learning orientation, and quality orientation for achieving greater firm performance. | 101 Taiwanese software firms | LO, MO and quality orientation combined create competitive advantage |
| Wang (2008) | The mediating role of LO in the EO–performance relationship. | 213 medium-to-large UK firms | LO mediates EO-performance relationship, |
| Voss and Voss (2000) | The impact of three alternative strategic orientations - customer, competitor, and product orientation - on a variety of subjective and objective measures of performance in the non-profit professional theatre industry. | 101 non-profit professional theatres | Association between different orientation and performance depends on the type of performance measure used. Customer orientation may not be desirable if organization has non-profit goals, high rates of intangible and artistic innovation or customers who may not be able to articulate their preferences. Product orientation is the better alternative in these circumstances. |
| Zaharieva *et al.* (2004) | Evaluation of marketing practices and market orientation in the Bulgarian wine industry | 10 cases, semi-structured interviews | Internal inertia and resistance, lack of knowledge, ambiguous ownership structures and grape procurement problems prevent Bulgarian wine industry from moving from production orientation to market orientation. |
| Zahra (2008) | Examines the interaction between EO and MO and the effect on performance in high and low technology industries | 457 manufacturing firms | The interaction effect between EO and MO is significant only in high technology industries |
| Zehir and Eren (2007) | The relationships between customer orientation and learning orientation, corporate entrepreneurship and business performance | 90 medium-to large automotive firms in Turkey | LO and customer orientation have positive effects on new business venturing, self renewal of the organization, and proactivity dimension of entrepreneurship. Innovativeness and new business dimensions (EO) have a positive effect on business performance. Also customer orientation affects positively on business performance |
| Zhou *et al.* (2005) | Conceptualizing and testing of a model that links different types of strategic orientations and market forces, through organizational learning, to breakthrough innovations and firm performance. | 350 Chinese respondents in consumer product sectors | MO facilitates technology-based innovations but inhibits innovations that target emerging market segments (i.e., market-based innovations). TO beneficial to technology-based innovations but has no impact on market-based innovations, EO facilitates both types of innovations. |

### *2.3.2 Summary of prior literature*

To summarise the results presented in Table 2, many of these studies are aligned in stating that technology, product or innovation focus is needed to complement the market orientation (Appiah-Adu and Singh 1998; Berthon *et al.* 1999; 2004; 2008; Gatignon and Xuereb 1997; Jeong *et al.* 2006; Knotts *et al.* 2008; Pearson 1993; Salavou 2005; Shaw 2000; Suh 2005). Based on the studies investigating orientation pairs, it appears reasonable to assume that entrepreneurial orientation supports the process of matching customer needs with the resources or technologies available to the firm (Atuahene-Gima and Ko 2001; Baker and Sinkula 2009; Becherer and Maurer 1997; Frishammar and Hörte 2007; Hult *et al.* 2004; Li *et al.* 2008; Schindehutte *et al.* 2008;) but studies actually incorporating the technology, customer and entrepreneurial orientation within the same study are few (Aloulou and Fayolle 2005; Kaya and Seyrek 2005; Li 2005). These studies are purely conceptual (Aloulou and Fayolle 2005) or offer the explanation that firms should choose one of the orientations to fit different circumstances or goals (Kaya and Seyrek, 2005; Li, 2005).

The relationship between learning and other orientations is less clear. Studies have found correlations between market and learning (e.g. Baker and Sinkula 1999a, 1999b; Slater and Narver, 1995, 2000) and entrepreneurial and learning orientations (Wang 2008), but the literature is in disarray especially on how entrepreneurial and learning orientations interact.

Overall the current state of knowledge appears to suggest that the effective level of the focus of a firm on markets or technologies appears to depend on the level of environmental dynamism (Gao *et al.* 2007; Hult *et al.* 2004) but also upon its internal culture, whether entrepreneurial (Schindehutte *et al.* 2008) or learning (Foley and Fahy 2004). These process orientations – the entrepreneurial or learning orientation – may determine the level of manifestation of each of the other orientations, and also unite market demands and the technologies of the firm, or change the pattern of orientations present (Schindehutte *et al.* 2008; Hult *et al.* 2004; Baker and Sinkula 1999a; 1999b).

Only one study (Zhou *et al.* 2005) was found to investigate all four orientations simultaneously, again focusing on the differential effects of different orientations rather than attempts to combine the views. Therefore, in terms of orientation research, this dissertation takes some steps into uncharted territory in pursuing its objective of drawing together these different views.

# 3 RESEARCH METHODOLOGY

## 3.1 Systems approach with analytical methods

This study could be described, from the perspective of relying mostly on quantitative data and statistical analysis, as incorporating positivistic epistemological assumptions. Yet, a strictly positivistic view would require that only law-like directly observable generalisations, as in the natural sciences, are an acceptable basis for claims of truth (Easton 2002). Yet, management science can rarely produce such generalisations and the strategic orientations of the firm (or its dimensions used in any survey) are not directly observable, empirical 'facts' in the sense that traditional positivist research would recognise. For example, the measures used for organizational performance, actually assume that managing directors are constructing, maybe even socially constructing, their perception about the performance in relation to other firms and their own objectives. However, the study in question does treat their response to the questions as 'objective' indicators of their organizational reality. Arbnor and Bjerke (2009) locate this kind of idea of *objectively accessible realities* within the systems approach. From this angle the interest in the scientific, analytical hypothesis and testing them – becomes similar to the interest of the pragmatist philosopher, George Herbert Mead (1863–1931), in whether it can illuminate *the world that is there*. (Aboulafia 2009)

This type of pragmatist systems approach considers the 'truths' produced by the quantitative investigation useful – but only partially. However, uniting several of these views creates a better understanding of the whole, despite the fact that the whole may not be just a sum of its parts. The *"systems approach goes on to discovering that every world view is terribly restricted"* (Churchman 1968: 231) and includes itself among those views that are restricted. Thus, while the systems approach is often distinguished from the analytical (and positivist or empiricist) view by its interest in the synthesis of the whole rather than analysis of the parts (Arbnor & Bjerke 2009), it does not exclude the importance of investigating the parts too, but simply expects that their function is interpreted in the context of the whole.

The systems approach is often criticised for being too abstract and not providing solid methodological procedures to conduct 'good quality' research (Arbnor & Bjerke, 2009), thus this study considers the use of statistical methods appropriate for explaining the strategic orientation of the firms, even if they are more commonly associated with the positivist tradition.

Systemic thinking is often understood narrowly, and the term may be disregarded without recognising the developments that allow multiple perceptions of reality (e.g. Churchman 1968, Checkland 1981, 2000), or ideas that the systems may be formed by the activity and communication in a bottom-up manner (Beer 1979, 1981, 1985). More importantly for the methodological choices in this study, the ideas systems approach allows the researcher to make an informed choice, to use statistical (or any other methods) *that suit the research problems* at hand (Jackson 1991) rather than restrict the choice within the more limited confines of some other philosophical approaches. In conclusion, while the classical Burrell & Morgan (1979) framework might place the study within the functionalist paradigm, it appears that the *systems approach*, assisted by use of analytical methods, is likely to describe the underlying assumptions of the study most effectively.

One of the original aspirations of systems theory was to attempt to combine and synthesize knowledge from different areas of scientific knowledge (e.g. Von Bertalanffy, 1969, Dubrovsky 2004, Mulej *et al.* 2006). While the present study obviously has more modest objectives, it does also attempt to synthesize different ideas about the strategic orientation of the firm from management, marketing and entrepreneurship literatures. Thus the underlying idea of the study is not to dismantle the organizational "black box" and judge its constituent parts, but to assess the whole from different angles appropriate to the system approach.

## 3.2 Study of configurations

Configuration is a multidimensional constellation of conceptually distinct characteristics that commonly occur together (Meyer *et al.* 1993). Organizational configurations include sets of firms that are similar in terms of some important characteristics (Short *et al.* 2008). In general, configuration-based research offers descriptions of organizations by identifying groups of firms that resemble each other along important dimensions. Fundamentally, the idea is that these configurations offer an explanation of organizational success, and such research ultimately attempts to predict which configurations will be successful in a given set of circumstances. (Short *et al.* 2008)

In this study, configurations are seen as 'cognitive configurations', that is, mental models, gestalts or archetypes that help to explain and understand organizational reality, rather than 'existential configurations' which would suggest that reality is actually composed of a few ideal configurations. (Donaldson 2001)

There are a number of different interpretations of configuration theory, yet the dominant mode of inquiry is commonly held to be holistic synthesis, rather than reductionist analysis. The relationships among the investigated attributes are often perceived as reciprocal rather than unidirectional. (Meyer *et al.* 1993) Miller (1986) argued that there are only a few viable configurations and that organizations need to make 'quantum' leaps between the viable configurations. However, Miller clarified (or changed) his position later (1996) and explained that in reality there are always a great number of viable configurations, and thus organizations do not need to make any giant leaps. It appears that he merely suggested that it is useful to simplify and identify some common configurations of strategy and investigate them, simply to make it possible to go beyond the approach of investigating only one variable at a time. Also Doty, Glick and Huber (1993) suggest that there is always a large number of possible configurations, hybrids, that each fit with particular values of contingency variables.

The hybrid configurations are a result of the limitations of an organization, or in other words, the strategic choices available to organizations are not unlimited, but restricted by its history, resources and other constraints on its ability to mimic the 'ideal' type. (Doty *et al.* 1993; Gresov 1989). This 'contingent hybrid configuration' version of configuration theory is also compatible with contingency theory (Donaldson 2001), with the exception of the assumptions of *equifinality*. Equifinality is a term that generally refers to "equally valid alternative ways of attaining the same objectives" (Skyttner 1996: 21). That is, configuration theory would argue that different configurations may thus be equally effective in the given circumstances and thus assumes that there are multiple states of fit, whereas the classic contingency theory would argue for single state of fit for each value of the contingency. (Donaldson 2001)

In conclusion, while the 'real' world is unlikely to be formed by neat configurations, or systems with clear boundaries, the researcher finds it *useful* to see strategic orientation as a configuration and organizations as systems.

## 3.3 Research designs and methods

The very nature of orientations as theoretical devices to assess the nature of strategy requires measures, thus the research objectives of this study also favour the usage of quantitative methods. This is also in line with the distinction made earlier, suggesting that qualitative studies should adapt the 'language' of dynamic capabilities while quantitative measures characterise the study of orientations.

The research questions of this dissertation are addressed through the literature review and two different sets of empirical data. As described in Table 3, article 1 is a literature review while the other articles apply various quantitative methodologies. The methodologies utilised are described in more detail within the articles themselves.

**Table 3.** The research design and methods in the articles.

| | **Article 1** | **Article 2** | **Article 3** | **Article 4** |
|---|---|---|---|---|
| **Research Design** | Systematic Literature review, Conceptual development. | Empirical investigation. Development of theory for the combinations of EO, CO and TO. Clustering the software companies and comparing the clusters in terms of learning and performance. | Empirical investigation. Testing the hypothesis on the relationship between EO, CO, TO and performance | Empirical investigation. Exploratory analysis of the relationship between EO and LO. Hypothesis testing. |
| **Method of data collection** | Systematic keyword search in Ebsco, ProQuest and Science Direct | Survey of Finnish software companies (n. 164) | Survey of Finnish software companies (n. 164) | Survey of Finnish software companies (n. 196) |
| **Main Methods of Analysis** | Content analysis of 129/68 published articles. | Cluster Analysis, Mean comparison (ANOVA) | Structural Equation Modelling using Partial Least Squares | Structural Equation Modelling using Partial Least Squares |

In agreement with the holistic underpinnings of the study, the literature review reported in article 1 was conducted using the systematic review method. Systematic literature reviews have their roots in medicine and are commonly used in disciplines advocating the positivist tradition, but the method has recently started to gain acceptance in the fields of management research that strive to become more 'evidence informed' (Tranfield *et al.* 2003). Systematic reviews differ from traditional narrative literature reviews by adopting a systematic, replicable and transparent process to conduct exhaustive literature searches. The reasons for including or excluding a particular study from the review are reported and the reviewed articles are evaluated using predetermined quality criteria. The objective is to reduce bias and present cumulative prior knowledge, to produce a synthesis of the literature that is both relevant and rigorous. Yet, despite the transparent methodology for conducting the review, there is always an element of subjectivity in both determining the criteria, and also in the actual synthesis.

Methodologically, configuration studies have favoured techniques such as cluster analysis that enable classification into groups and analysis of variance that diagnose differences between the identified groups (Short *et al.* 2008). Traditionally the focus of configuration research has been on the investigation of theoretically derived typologies or empirical taxonomies (Meyer *et al.* 1993). This common approach to configurational research has been adapted in *article 2*.

*Article 2* investigates the viable configurations of orientations. For this somewhat explorative research question, cluster analysis was found to be the most appropriate statistical method. Cluster analysis is an explorative method and in the k-means technique the cases are clustered into homogenous groups using the criteria assigned by the researchers (Ketchen and Shook 1996). The study also compares the groups resulting from the cluster analysis by using the one-way ANOVA. Tukey's post hoc analysis (Tabachnick and Fidell 2007) is used to test which clusters differ from each other in terms of organizational learning and company performance.

However, cluster analysis or similar classificatory methods cannot provide any information on the relationship between the constructs forming the orientation configurations. As Miller (1986) argued, the important thing missing from configurations studies is actually the investigation of the configuration themselves. While the taxonomies and typologies are attractive due to their simplicity, it is equally important to understand how the elements within the configuration interact, or as Miller (1986: 509) put it, it is also important to understand the *"complex systems of interdependency brought about by central orchestrating themes"*.

The papers 3 and 4 focus on the relationships between the different views, the system of elements that potentially form the strategic orientation configuration. This kind of investigation, that attempts to understand how the elements within the configuration interact, is not possible with the above mentioned clustering methods, but requires techniques such as regression or structural equation modelling that capture the relationships between the elements that interact to form the configurations.

Therefore, these two papers model the relationships using the covariance based, Partial Least Squares (PLS) path modelling approach to structural equation modelling (SEM) using the SmartPLS M3 software (Ringle *et al.* 2005). The PLS approach was selected over other SEM methods mainly because it allows simultaneous investigation of both reflective and formative latent constructs as the nature of the study constructs demands. The measurement items in all three empirical papers are adapted or further developed on the basis of prior studies. A number of other tests concerning various measurement biases and validity and relia-

bility were conducted and reported within the articles to provide ample evidence and sufficient confidence in the overall reliability and validity of the results.

Finally the discussion section of this dissertation conceptually derives a model which represents the strategic orientation as a four dimensional configuration and so provides a synthesis of the prior literature with the empirical work conducted within this research. The model may be used to identify and assess ideal hybrid configurations for different contingencies.

## 3.4 Data from the software industry

Enquiry into configurations has tended to favour single industry (rather than multi- or cross industry) samples, as they are seen as providing more specific explanations (Short et al. 2008). The present study is consistent with its predecessors, in that its empirical data is used to explain and predict performance outcomes of the configurations within a single, Finnish software industry setting. It represents a dynamic context with knowledge intensive, growing, small and medium-sized companies, many of which compete in the international markets.

The quantitative analysis in articles two, three and four are based on two different datasets (n.164 and n.196) that were collected via electronic questionnaires from the managing directors in 2008 and 2009. Managing directors were considered the most knowledgeable informants in answering the questions regarding the strategy of the software firms. While this approach has its well-documented disadvantages (for discussion see e.g. Bowman and Ambrosini 1997), it has become the customary and even preferred (Lyon *et al.* 2000) approach for this type of research into small and medium-sized businesses. Therefore, the perceptions and beliefs of the managing directors were considered as the best available source of information at the organizational level.

The first data set (n. 164) was derived from the industrial classification class 72 (Computer and related activities) of Statistics Finland. While this class may have included firms pursuing computer-related activities other than software, the questionnaire was worded in a manner that would only elicit responses from software firms. The researcher confirmed that respondent firms were actually operating within the realms of the software sector by visiting their websites. Statistics Finland made changes in their industrial classification system in 2009, making it easier to identify the software firms. The respondents in the second data set (n. 196) are derived from the class 62 (Software, consulting and related activities) and should be viewed as comparable to the respondents in the first data set.

The software sector was selected as an appropriate industry on which to test the ideas of this research mainly due to its dynamic, knowledge-based nature, and because it is composed of many small and medium-sized businesses. The expectation was that the sector's characteristics would help make the various orientations of the businesses visible. The software industry context also guided the selection of the study measurement constructs. For example, two of the empirical studies utilise technology orientation, instead of the broader conceptions of product orientation, because the high-technology content of the products was perceived to be particularly relevant in the software sector.

The importance of the industry in which the company operates as a predictor of firm performance is well established. It has been argued that the industry explains more of the variance in performance than any other variable, and therefore it is critical that its effects are controlled (Dess *et al.* 1990). One of the common ways to do this is to delimit the sample to a single industry, thus avoiding many of the problems relating to the varying effects derived from separate industries (Dess *et al.* 1990). However, the single industry studies, while providing an effective and straightforward method for controlling the industry effects, obviously have inherent limitations in terms of generalizability of the results outside the focal industry. Yet, the single industry studies have high internal validity and often serve well as a first step before multi-industry studies and attempts for broader generalisation of theories (Dess *et al.* 1990).

Clearly, the software industry is still not an entirely homogenous environment. Some firms offer pure, standardized software products that are marketed to a large number of customers in exactly the same format. These software products are sold as stand-alone products, not as part of some larger package or product, although associated installation, training or customization services may be offered. On the other hand, some firms focus more on the customer-tailored software or embedded software that is part of a physical product or system. In addition, the software industry also includes a number of companies that do not have their own, self-developed software product, but provide services that support the activities of the software producers. (www.swbusiness.fi). Due to this potential variation, the empirical papers of this dissertation also applied a range of variables (such as firm size, age and perceived environmental uncertainty) to control for the variance within the software industry.

In general, the Finnish software industry may be described as a rapid growth, dynamic environment. The revenues in the industry have steadily grown, and despite the economic downturn, the turnover of the industry grew by 8.7% in 2008, to approximately 2.3 billion euro. Reports from the industry suggest that even in

2009 the development of the software industry has outperformed other technology sectors. (www.softwareindustrysurvey.org)

A software industry survey (Rönkkö *et al.* 2007) notes that Finnish software companies consider the development of products and technologies, and developing marketing related competences, to be amongst the key improvement and focus areas for them – suggesting that technology orientation is very much present within the industry. Software businesses typically operate in business to business markets and their success is dependent on achieving wide market acceptance to counterbalance the high cost of product development (Rönkkö *et al.* 2007). Being able to understand customers, while also developing technology to match the needs of those customers, does appear crucial in this context. In addition, the software industry provides a setting which favours building competitive advantage through intangible know-how, with a lot of small entrepreneurial companies striving towards global markets (Ruokonen & Saarenketo 2009). This context should thus provide an appropriate setting to investigate not only customer and technology orientations but also learning and entrepreneurial orientation simultaneously.

# 4 CONFIGURING THE STRATEGIC ORIENTATION OF THE FIRM

This chapter discusses the findings of this study and reflects them against the prior literature.

## 4.1 The complementary view

*Article 1* argues that many of the relationships between different orientations have not been studied to any great degree and that there are research gaps in the information available on the relationships between entrepreneurial, technology and learning orientations in particular. However, the more central contribution of *article 1* is the identification of a three-approach framework. The *sequential*, *alternatives* and *complementary* ways of perceiving the relationship between orientations all suggest courses for further research. The complementary view of strategic orientation became the basis for the theory development, allowing the investigation of orientations as separate constructs, but interlinking them through the idea of strategic orientation as a configuration of different, complementary orientation dimensions.

Central to the argument in this particular chapter are two pairs of apparently opposing forces that the study in fact suggests as complementary, and that should be balanced with each other. The first of these *dualities* (not dualisms) is that of markets and technologies, dealing with the relationship between customer and technology orientation and proposing that entrepreneurial orientation acts to combine these views. This idea is investigated empirically in *articles 2 and 3*.

The second pair relates to the processes which potentially help to find the balance between markets and technologies, and represents a duality of its own – 'entrepreneuring' and learning. It was found that both prior theory and the findings in *articles 2 and 3* suggest that entrepreneurial orientation is mainly focused on growth. Yet, profitability does not necessarily follow from growth (Glancey 1998) but is a separate, important dimension of performance. Organizational learning orientation is often regarded as beneficial to the profitability of firms (Baker and Sinkula 1999b), while the literature review also suggested that the relationship between entrepreneurial and learning orientation has been little studied, the fourth article is devoted to the exploration of the relationship between the growth seeking entrepreneurial orientation and learning orientation, closely allied to profitability.

As a result, the chapter puts forward the complementary idea of perceiving strategic orientation as a multidimensional configuration of the market, technology, entrepreneurial and learning orientations. The framework builds on the idea that while technology orientation has its internal focus on the resources of the firm, customer orientation approaches the dilemma from the external market positioning viewpoint. Thirdly, certain orientations relate to the processes through which organizations attempt to build a balance between their resource base and the markets. In this role, standing in between technology and customer orientations, the entrepreneurial orientation is seen to enable growth and provide the nourishment required for learning orientation to improve efficiency. In turn, learning orientation has a more direct link with profitability, while it also encourages entrepreneurial exploration of new markets and technologies.

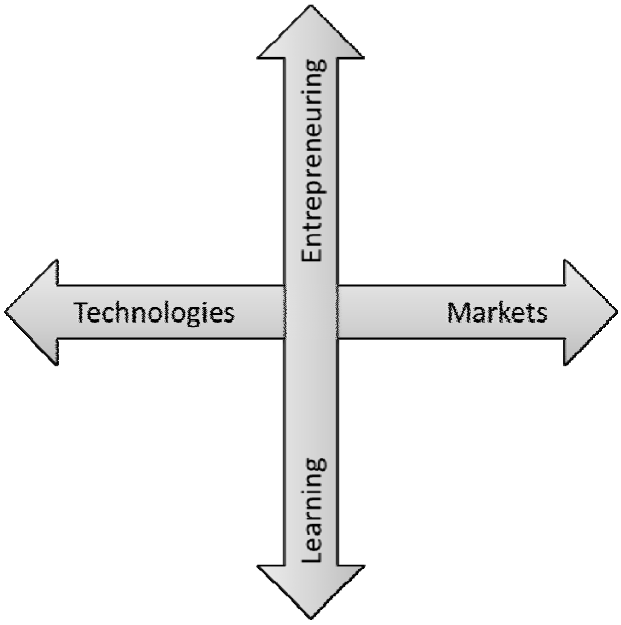



**Figure 2.** Framework of dualities.

## 4.2 Markets and technologies

Market orientation refers to the ability of the company to understand its customers, competitors and to make use of that knowledge in their value creation process. The direct positive link between market orientation and the performance of a firm has been solidly established in the previous research and recent meta-analyses (e.g. Cano et al. 2005; Kirca et al. 2005). The strength of the relationship does vary, and studies occasionally fail to find the relationship, especially

under uncertain demand conditions, when customers are unable to communicate their preferences (e.g. Gao et al. 2007; Voss and Voss 2000). A recent study by Ruokonen & Saarenketo (2009) provides evidence that market orientation is an important element in the creation of competitive advantage in the context of Finnish software companies.

Similarly, technology orientation refers to a firm's inclination to introduce new technologies, products or innovations (Gatignon and Xuereb 1997, Hult *et al.* 2004) and has been found to benefit performance in many studies, (e.g. Day 1999; Gatignon and Xuereb 1997). Some studies suggest that a technology orientation is effective for technologically turbulent, uncertain environments in particular (Berthon *et al.* 2004; Gao *et al.* 2007). A recent study by Gao *et al.* (2007), suggests that the effect of technology orientation on performance moves from negative to positive as levels of technological turbulence increase, thus it seems that technology orientation, should certainly be relevant for the fast-paced software industry– at least during periods of disruptive change.

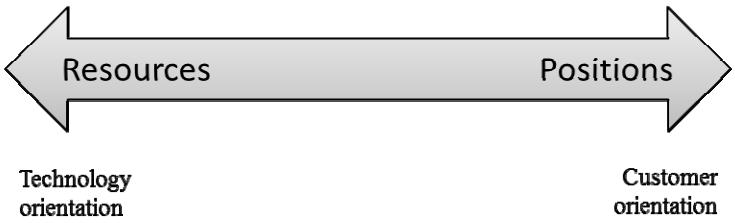



**Figure 3.** Technological resources and customer value positions.

The market vs. the technology/product is one of the long-established debates within marketing, thus it is not surprising that a number of studies have investigated the link between the market and technology orientations. These studies suggest that successful companies have adopted a simultaneous focus on markets and technologies (e.g. Appiah-Adu and Singh 1998; Knotts *et al.* 2008; Shaw 2000 It also appears that customer orientation provides more direct and immediate results affecting customer acceptance of new products and profitability in both high and low levels of market turbulence (Berthon et al. 2004; Jeong et al. 2006), while the effects of technology orientation may become visible only in the longer term (Knotts *et al.* 2008) or in high turbulence environments (Berthon *et al.* 2004; Gao *et al.* 2007).

It appears that most scholars investigating the market and technology orientations simultaneously have now settled for the sensibly dualistic view of both approach-

es having their role to play. So while the tension between market and technology may not be much of a tension in most recent research, the views provide at least two 'traditionally tensioned' viewpoints for this study. More importantly, while the prior studies are aligned in stating that both are needed, there are a limited number of studies that attempt to study the processes of combining these two.

While technologies and customers outline two viewpoints for assessing the strategic orientation of the software firms, a recent study (Schindehutte *et al.* 2008) has conceptually suggested that entrepreneurial orientation may combine or act in between the two.

## 4.3 Entrepreneurial orientation – a process between technologies and markets?

*"All the evidence we have indicates that the growth of firms is connected with the attempts of a particular group of human beings to do something"*

The above quote comes from the book *"The theory of the growth of the firm"* by Edith Penrose (1959: 2), and acting upon opportunities is certainly central to entrepreneurship. It is conceptualized through dimensions of risk taking, being innovative and proactive (here also termed *innovativeness* and *proactiveness*) in the organizational level measures of entrepreneurial orientation (Miller 1983; Covin & Slevin 1989). Taking risks through proactive, innovative actions suggests better adjustment to the environment and may be a predictor of positive performance from a firm, even in the long-term (e.g. Hult *et al.* 2004; Wiklund 1999; Wiklund and Shepherd 2005).

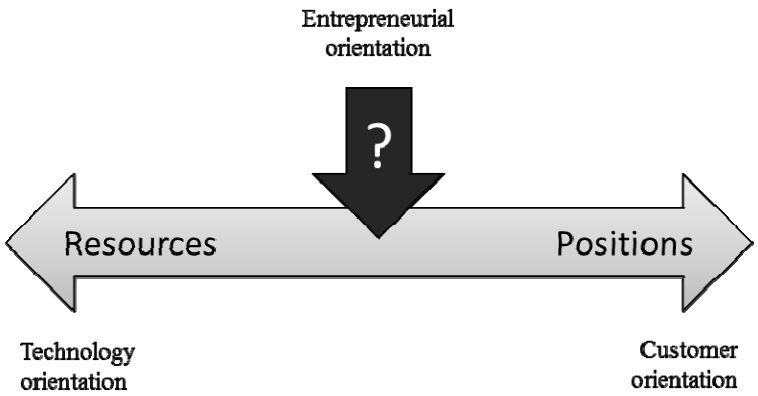



**Figure 4.** Entrepreneurial orientation as an integrative process.

The relationship of market orientation to entrepreneurial orientation has been perceived in a number of ways. In general, it appears that market and entrepreneurial orientation correlate (Miles and Arnold 1991; Becherer and Maurer 1997; Slater and Narver 2000) but are not the same in their underlying philosophy (Miles and Arnold 1991). The difference in philosophies may also be seen in how the concepts are positioned in relation to each other. Some writers position entrepreneurial orientation as the antecedent that leads firms to become customer or market oriented (Morris and Gordon 1987; Miles and Arnold 1991; Morris *et al.* 2007), others would rather see entrepreneurship as a mediator or moderator between market orientation and business performance (e.g. Li *et al.* 2008). The resource-based viewpoint perceives both market and entrepreneurial orientation as organizational capabilities that together contribute to the creation of competitive advantage (Hult and Ketchen 2001).

Studies, irrespective of their viewpoint, generally argue that high levels of entrepreneurial and market orientation in combination is a good thing (Atuahene-Gima and Ko 2001; Tzokas *et al.* 2001), albeit some studies (Bhuian *et al.* 2005) suggest that moderate levels of entrepreneurial orientation suffice in less dynamic environments. Others have suggested that the dimensions of proactiveness and innovativeness are particularly important in strengthening the positive effects of market orientation (Li *et al.* 2008; Frishammar and Hörte 2007) Generally, it appears that most researchers agree that both entrepreneurial and market orientations are needed and that entrepreneurial orientation complements market orientation (e.g. Atuahene-Gima and Ko 2001; Bhuian *et al.* 2005; Li *et al.* 2008; Slater and Narver 1995).

The relationship between entrepreneurial and technology orientation is rarely studied. While Kaya and Seyrek's (2005) study finds that technology orientation supports financial performance in conditions where market dynamism is low, but technological turbulence is high, and that entrepreneurial orientation supports financial performance under both conditions, the study does little to investigate the relationship between entrepreneurial and technology orientation. Moreover, other empirical studies utilising technology, entrepreneurial and market orientations simultaneously tend to investigate only the direct effects of each orientation separately. Zhou *et al.* (2005) finds that market and technology orientation positively affect technology-based innovations; the market orientation also has a negative impact on market-based innovations and only entrepreneurial orientation positively affects both types of innovation (Zhou *et al.* 2005). Li (2005) finds that all of these orientations support the formation of managerial networks that further aid the performance of the firm. Thus, while the prior study has investigated the intersections between market and technology and market and entrepreneurial

orientation, there is only isolated evidence on the combinations of the three. However, conceptually, Aloulou and Fayolle (2005) suggest the entrepreneurial orientation essentially blends and uses the appropriate elements of market, technology and stakeholder orientations in order to achieve entrepreneurial aspirations. In the same vein, Schindehutte *et al.* (2008), argue conceptually through case-evidence, that entrepreneurial orientation underlies other strategic orientations and determines if and how they manifest themselves. Thus, in the light of these gaps in the prior literature, it is worth investigating if entrepreneurial orientation actually functions as an integrative process between the market and technologies.

Both *articles* two and *three* of this study approach the relationship between market and technology orientation from the abovementioned viewpoint. Entrepreneurial orientation is seen as a process which matches technological focus with the customer needs, and the results of *article two* suggest that a configuration featuring high levels customer, entrepreneurial and technology orientation is the most successful strategic orientation among Finnish software companies. The much sought after customer focus on its own is simply not enough to drive the growth of firms, although the result suggests that such kinds of customer-oriented 'servant' companies do survive. *Article three* investigates the relationship between entrepreneurial, customer and technology orientations in more detail. These results suggest that while entrepreneurial orientation appears to have an effect on both levels of customer and technology orientation, only entrepreneurial and customer orientation affect the performance of the firms. It is somewhat surprising that a focus on technology does not appear to affect software company performance, but on the other hand, it may well be that technology orientation has a more long-term effect on *survival* – rather than on the financial or growth performance of software firms.

*Article two* also suggests that it is an organizational learning capability that enables companies to successfully combine appropriate doses of customer, entrepreneurial and technology oriented behaviours. Organizational learning orientation is also a process of creating and using knowledge, and may be perceived as adjusting the mix of strategic orientations. Additionally, the literature review revealed very little research on its link with the entrepreneurial orientation – and the question of the roles of entrepreneurial and learning orientation remained unanswered.

## 4.4 'Entrepreneuring' and learning

Prior study has suggested that effective entrepreneurial firms are not managed by consensus, but in fact that many seem to have a growth-facilitating strategic process that is relatively autocratic in nature (Covin *et al.* 2006). At the same time, organizational learning orientation advocates keeping an open mind, and having a commitment to learning and development through a shared vision of what the organization needs to do (Sinkula *et al.* 1997). The idea of an autocratic organization demonstrating an open mind and a shared vision appears to be paradoxical, and the tension between the views of entrepreneurial and learning orientation is evident.

The process of organizational learning may be considered as a general ability to change the behaviour of an organization, and a learning orientation is routinely viewed as the organization's propensity to create and use knowledge (Sinkula *et al.* 1997) in order to attain competitive advantage (Calantone *et al.* 2002). As an integrative process, learning orientation could thus be considered similar to entrepreneurial orientation, which enables organizations to combine both market and technology oriented behaviours. However, in contrast to entrepreneurial orientation that proactively and innovatively explores the possibilities existing between technologies and markets and tolerates the risks in the process, learning orientation may be seen more as a systematic process attempting to understand both customers and technologies, and even the entrepreneurial process of exploration – and attempting to build a shared vision of the direction of the enterprise. In this sense the learning orientation may be seen as taking small incremental steps towards improvement, while entrepreneurial orientation promotes larger leaps.

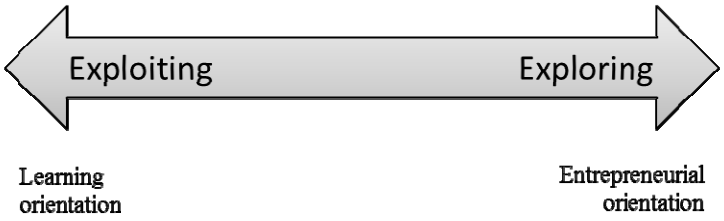



**Figure 5.** Learning to exploit entrepreneurial exploration.

It may be suggested that whilst reflecting an organizational culture tuned to creating and using knowledge (Sinkula *et al.* 1997), a learning orientation also acts in between other orientations and in between the antecedents and effects of other orientations, transforming knowledge into appropriate actions and guiding the

creation of appropriate knowledge. To a certain degree, learning orientation has a similar role to entrepreneurial orientation, in guiding value creation – but it might also act as double-loop learning (e.g. Argyris 1977) and replace, or adjust the level of entrepreneurial orientation resulting in more systematic (or even 'conservative') processes of value creation over time.

However, the tension is interesting, because the open-mindedness and the questioning of the current idea of the business might also create entrepreneurial organizations that continuously explore the new opportunities, and, if successfully balanced, also learn from entrepreneurial behaviour.

Yet the relationship between learning and entrepreneurial orientations was found to be largely unexplored. However, Barrett *et al.* (2005a; 2005b); Kropp *et al.* (2006), Liu *et al.* (2002; 2003), Zehir and Eren (2007), and Zhou *et al.* (2005), have all found that market, learning and entrepreneurial orientations correlate with each other in various contexts, and suggest that they are all beneficial for performance. Studies have suggested that learning orientation mediates the relationship between other orientations and performance (Liu et al. 2002, 2003; Wang 2008). Zehir and Eren (2007) indicate that learning might also strengthen the entrepreneurial orientation. Only Wang (2008), in a study of 213 medium-to-large UK firms, concentrates exclusively on the entrepreneurial and learning orientations. That study suggests that learning orientation is an essential mediator in the entrepreneurial orientation / performance relationship.

In order to investigate this relationship, new data was collected and explored. The fourth paper considers that different organizational processes, (reflected in the measures of entrepreneurial and learning orientation) might be appropriate for different ends, but still complementary given that organizations have multiple goals. Closer inspection of the results of *articles two and three* also suggests that the combination of customer, entrepreneurial and technology orientation only makes a significant difference to the *growth* of the software companies – thus the important element, profitability, was missing. So *article four* focuses on the relationship between entrepreneurial and learning orientation and suggests that while these interact, entrepreneurial orientation is more closely linked with the growth of firms. It is their learning orientation that more directly affects the profitability of software firms.

The latter finding supports previous findings (e.g. Wang 2008) in terms of the mediating role of learning orientation in the entrepreneurial orientation-performance relationship. However, prior studies have utilised a hybrid performance measure that does not separate the effects on profitability and growth. Therefore, the central finding of the paper is that this mediation relationship of

learning holds only for the effects on profitability. In terms of the mechanism for growth, the relationship appears opposite and anticipated effects appear to have switched places – learning orientation has an indirect effect on growth, and its effect is mediated by entrepreneurial orientation. This finding made gaining a more sophisticated understanding of the interplay between learning and entrepreneurial orientation something of a challenge, and led to the testing of various other theories and moderation models in the course of developing the paper. However, there was a clearly discernible empirical result showing that the switching of roles referred to above depended on the dimensions of performance and the result was theoretically supported when the scope of theory was extended beyond the current orientations literature.

The discovery of opportunity is necessary before it can be acted upon and made profitable. The growth of the organization is fostered by recognising new entrepreneurial opportunities. Kirzner (1997) suggests that entrepreneurial opportunities differ from other opportunities for profit, in that they require the discovery of new 'means-to-ends' relationships. Yet, the possession of prior knowledge, that may be connected with the new knowledge is a necessary precondition for recognising new opportunities (Shane and Venkataraman 2000), while entrepreneurial organizations may make the decisions on a purely intuitive basis, it could be suggested that organizational commitment to learning extends the stock of information from which opportunities may be recognised. Recently, Anderson *et al.* (2009) have also suggested that there may be a synergetic, reciprocal relationship between entrepreneurial orientation and strategic learning.

In conclusion, neither learning, nor entrepreneurial orientation requires the presence of the other, but both types of organizational processes benefit from having the other present. In software companies, learning orientation mediates the effects of entrepreneurial orientation in terms of profit, while entrepreneurial orientation mediates the effects of learning orientation in terms of growth. If software firms seek profitability and growth, they should find a way to actively manage both explorative entrepreneurial and the more exploitative learning processes.

## 4.5 Strategic orientation as configuration

In general, the body of prior literature supports the idea that orientations are interlinked. Many studies have found correlations between a market and learning orientation (Baker and Sinkula 1999a, 1999b; Slater and Narver 1995, 2000), a market and entrepreneurial orientation, (Atuahene-Gima and Ko 2001; Becherer and Maurer 1997; Miles and Arnold 1991) a market and technology orientation

(Berthon *et al.* 1999, 2004; Gatignon and Xuereb 1997) and an entrepreneurial and learning orientation (Wang 2008).

Prior knowledge combined with the investigations conducted within this dissertation suggest that an effective strategic orientation configuration includes dimensions that focus on the internal priorities of the firm (such as the development of new technologies), the external influences of the environment (such as customers), and those concerned with the process which determines how those priorities are combined within the firm (such as entrepreneurial and learning orientations). The entrepreneurial orientation appears more closely related to growth activities, while the learning orientation relates to the profitability, and adjustment of the level of manifestation of the other orientations.

In a more generic manner, this dissertation study puts forward a concept of strategic orientation as a combination of the positions and resources of a firm, and its constituent papers discuss this through the concepts of customer and technology orientation. On the other hand, the more generic discussion on the exploration – exploitation axis is conducted through the concepts of entrepreneurial and learning orientation. These are not considered opposites, but complementary processes enabling firms to find competitive advantages, through simultaneous exploitation and exploration of both resources and market positions. In essence, this conception of strategic orientation (as depicted in figure 6) below, combines the four different viewpoints of the strategic orientation of the subject firms.

In Figure 6, the 'Integrator', 'Player' and 'Servant' are examples of potential configuration profiles that may be found when this conception of strategic orientation is used. These examples are derived from the empirical study (see article 2) within the software industry and configurations may take another form in other industries. However, the examples illustrate the potential of the concept in visually comparing the different configurations within or across industries.

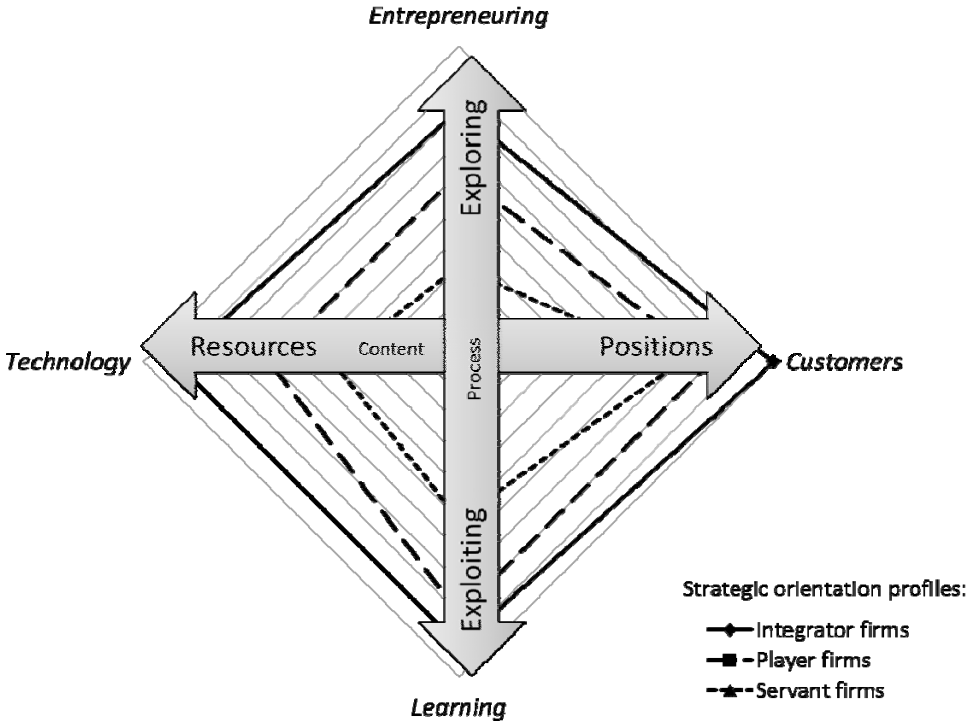



**Figure 6.** Strategic orientation as configuration.

As individuals have very different ideas about strategy, and because what is strategically important varies across different environments, industries or firms, this idea of strategic orientation may serve a number of different purposes.

The presented form of strategic orientation is very malleable and capable of accepting the addition or removal of other dimensions. However, that is not to suggest that any concepts could just be bundled together. It is extremely important that different dimensions are indeed different, yet, compatible views. This requires careful and accurate assessment of the relationship between the concepts. The concept of strategic orientation may be adjusted to assess those dimensions found to be important for the conception of strategy, or indeed, for the research context. For example, in this study, technology orientation was chosen to represent 'resources' (instead of production orientation, quality orientation or product orientation, for instance) because the ability to utilise high technology was assumed to be particularly important for the software industry.

Once the industry specific, ideal configurations are identified, they may be used as benchmarks for assessing the orientation of individual firms. Doty *et al.* (1993) suggest that the closer the firms are to the ideal configurations, the better they

perform. Investigation of industry specific types would have an advantage of being tailored more specifically, and thus taking into account the nature of the industry, and so maintaining the parsimony of the configuration approach.

Thus, the concept of strategic orientation is not limited to the particular dimensions used in the empirical papers, but this abstraction may (and should) be fine-tuned for other research settings by adding the dimensions that are relevant for a particular industry environment. For example, cost, service or various environmental/ecological dimensions may be highly relevant for certain industries as dimensions of strategic orientation affecting the performance of the firm.

Managerially, this strategic orientation concept may also be developed into a strategic tool through which the strategy of the firm may discussed and shared within the firm. Similar to comparison of the strategic orientation pattern of different firms, the tool may be used in comparisons of the comprehension levels of people within the same firm. That would mean strategic orientation measures providing a tool to facilitate discussions on the strategic direction of the firm. This process could also incorporate the discussion of the measures (and thus objectives) for each dimension, thereby enabling discussion of the strategic orientation to become a relevant device to support discussion and measure strategically important issues at the firm level.

The next chapter draws some conclusions about the contribution of the study and discusses its limitations alongside future research implications.

# 5 CONCLUSIONS

This dissertation investigates the strategic orientation of Finnish software firms using entrepreneurial, technology, customer and learning orientation as dimensions of strategic orientation. The first focus of the present study was on combining the technology and customer views through entrepreneurial orientation. The study suggests the entrepreneurial orientation of the firm may enable effective matching of technological resources and customer needs. Software firms combining entrepreneurial, technology and customer orientations appear to perform better than those focusing solely on serving customer needs.

Second, organizational learning orientation was also considered as a complementary process that works together with entrepreneurial orientation in support of profitable growth. These results, suggest that entrepreneurial orientation is more directly linked with growth dimension of performance, while learning orientation has direct links with profitability.

Overall, research suggests that together the different orientation concepts form patterns that constitute a strategic orientation. This holistic view 'configures out' strategic orientation in a manner that enables more effective use of the concept both in research and in management practice.

## 5.1 Contributions

### *5.1.1 Contribution of the articles*

The literature review lends transparency to the dispersed orientation literature investigating the studies that have utilised multiple orientations within the same study in particular. The first article summarises the current state of knowledge and reveals some major gaps in the extant literature. Its second contribution is to further enquiry, through the conceptual development of a three-approach framework. The *sequential*, *alternatives* and *complementary* views of the relationship between orientations suggest different courses for further research. The complementary approach has the other two embedded within it and was adopted for the empirical papers of this dissertation. The approach encourages discussion between different streams of literature and the empirical papers contribute to this conceptual synthesis of prior literature by investigating the configuration of customer, technology and entrepreneurial orientations in the context of the Finnish software industry.

The findings derived from *article 2* suggest that entrepreneurial, technology and customer orientation are indeed complementary. The paper contributes to the theory on strategic orientations by also developing a three-dimensional typology of the theoretically possible combinations of entrepreneurial, technology and customer orientations. The prior typologies in the orientations literature have focused two-dimensionally on the product-market dimensions. With the addition of the current paper's contribution, there is a richer framework against which the configurations of these orientations may be contrasted, in the software and other industries. In the dynamic context of the software industry, three types of configurations were identified. *Servants* – with their main focus directed almost entirely towards serving their customers – do appear to be viable, however, the other two types of firms, coined as *players* and *integrators* of multiple orientations do appear to grow faster and display higher levels of organizational learning. Future research should investigate if these viable configurations are present in other, less dynamic industries – and indeed if there are more, or different, viable configurations.

The results of *article 3* align with the conclusions of *article 2*, but it also adds to our knowledge by revealing the actual relationships between the studied concepts. Entrepreneurial orientation affects both technology and customer orientations. The result also suggests that while entrepreneurial orientation directly affects performance, it is also partly mediated by customer orientation. Customer orientation does correlate with entrepreneurial orientation but not with technology orientation, suggesting that customer orientation alone cannot promote the more effective, player and integrator configurations illustrated in *article two*. The effects of technology orientation on performance remain unclear, but contrasting with the *article two*, it does seem to have a role, but not one directly related to the performance measures utilised.

The fourth article contributes towards understanding the complementary effects of entrepreneurial and learning orientations in creating successful software firms. This nexus is very little researched and the article is therefore somewhat exploratory in nature, however, the result implies that instead of considering entrepreneurial and learning orientations as alternative processes, we should view them as supporting one another in the creation of profitability and growth. A prior study (Wang 2008) has suggested that learning mediates the effects of entrepreneurial orientation on performance, but the study used hybrid measures that do not distinguish between the growth and profitability dimensions of performance. The current study highlights the importance of treating performance as a truly multidimensional measure. Using hybrid measures may have significant shortcomings

in terms of theory development, as the results suggest that learning only mediates the entrepreneurial orientation – profitability relationship.

### *5.1.2 Overall contribution*

Overall, this study and the articles within, contribute by addressing some major gaps in the prior literature investigating the relationship between multiple orientations. Generally, empirical evidence is found to support prior conceptual literature suggesting that firms should combine elements of market, entrepreneurial, technology and learning orientations. The results add to our understanding of the interplay and synergetic effects of these orientations and suggest that these orientations should be considered contingency dependent, complementary dimensions of the broader strategic orientation construct.

Through the conceptual discussion contrasting the results of this study and those of prior research, this dissertation also contributes to strategy literature by presenting a multidimensional way of assessing the strategic orientation configurations of a firm. This conceptual contribution may be contrasted against prior attempts in the literature to extend each of the concepts (e.g. Narver *et al.* 2004 in extending the market orientation to include responsive and proactive dimensions) and to develop universally beneficial explanations of performance, or simply to position the orientations as alternatives to each other.

The integrative framework developed is perhaps the most important contribution of the study to the academic discussion. It suggests that ideas derived from multiple streams of literature may be combined under the umbrella of strategic orientation. By utilizing the framework, different strategic orientation configurations may be identified, and then ultimately assessed for differences (or potential equifinality) in terms of the various performance measures they entail.

### *5.1.3 Managerial contributions*

In terms of a contribution to the software industry context and managerial practice, the study suggests that successful software companies do simultaneously balance technology and customer focus, and moreover, do so by entrepreneurial, proactive, innovative behaviour that may be assisted by an orientation towards learning, open minded attitudes and a shared vision of the optimal direction of the firm. The results should urge companies to develop a more holistic view and awareness on the strategic directions of the firm. Directing the company based on a single philosophy, be it technology, customers, learning or entrepreneurial ac-

tions, is simply not going to be adequate in competition against firms that have mastered the multiple orientations approach.

A clear, multidimensional strategic orientation could serve as a powerful means of forming and communicating strategic pathways, and so help to empower people to make the smaller, everyday decisions. However, strategic orientation remains abstract and theoretical and does not in itself provide answers for everyday decision-making situations. Therefore, as a managerial tool, strategic orientation configurations as presented here, are likely to be best used in strategy development and assessment at the top management team or at board level. Perceiving the strategic orientation as a configuration could encourage a more holistic view among the top management team and that in turn could assist the development of strategies. While the top management team should ideally represent the different functions and viewpoints at work within the company, the members of the management team tend to feel the need to defend their respective viewpoints, rather than attempting to build a shared view. The strategic orientation could serve as a device assisting directors to approach problems from a holistic point of view that is not naturally familiar to them. For example, encouraging the production director to recognise the customer viewpoint, or making the cost-conscious finance director see the worth of entrepreneurial, risky activities. The multidimensional strategic orientation construct could be put into practice to facilitate strategy discussions, and would prompt the management team to approach situations from different viewpoints. Thus, this kind of malleable, but abstract theoretical concept could facilitate the ascendance of a more holistic, shared view within top management teams, and further on, provide a richer, but consistent framework, within which the organization may take the more operational decisions secure in the knowledge that they are aligned with the overall strategy.

## 5.2 Reflections, limitations and further study

As with any study, there are a number of limitations associated with the choice of theories, data and methods of inquiry. While each of the articles contains a discussion on the associated limitations, this section focuses on more general limitations, or difficult choices made along the way, and points out some of the potential future research directions.

The study constructs in this dissertation were defined *a priori,* and there was a wealth of theoretical bases from which to derive the conceptualizations, and no real reason to start from scratch. On the contrary, for this study, one of the main challenges was to delimit the number of different conceptualizations to a manage-

able level. The decision to focus on customer, entrepreneurial, learning and technology orientations was partly derived from the idea of organizations as open systems (Katz and Kahn 1966), which is implicitly part of the majority of modern management thinking (Stacey 2007). The idea is simple; inputs (from the resource markets) are transformed into outputs (for the product and services markets). Organizational performance largely depends on the effectiveness and efficiency of the transformation process (which is again dependent on how it is organized and how it fits with its environment) in turning the inputs into the right (more valuable) outputs with the least possible effort. The role of strategic orientation (the managerial subsystem) is to guide the transformation process, thus strategic orientation is concerned about *what* the transformation process produces, *how* it works and for *whom* it produces outputs. In the context of software companies these concerns were economized to technology orientation (what) entrepreneurial and learning orientations (how) and customer orientation (whom).

The choice of measures for these dimensions was one of the greatest challenges. Ideally, one would want to include all possible scales within the data collection, but while this may be attractive, it is clearly also impractical, and overly long questionnaires may also create issues with the reliability of the data. It was mentioned above that the open systems model and the attempt to integrate different managerial systems provided the point of departure for the selection of measures.

Given the choice of the software industry as the context for the empirical studies – technology orientation was deemed the most appropriate for the ideas of the production and technological subsystem. However, there could have been a wealth of other measures that might be associated with this subsystem, such as the Resource orientation, Human Resource orientation, Quality orientation, Product orientation, Production orientation. Nevertheless, technology orientation was chosen, partly because it appears to be the most modern interpretation of the view.

From the angle of the supporting subsystem–sales and market positioning–the choices were more limited. Marketing orientation was deemed too functional, due to its focus on the marketing function and the investments made in marketing. Sales orientation might also have been an effective indicator, but is not very commonly used. The most commonly used market orientation measures are three dimensional, thus mixing the process of coordinating with customer and competitor information. Choosing any of the three-dimensional measures available from different authors, would have resulted in considerable overlap with the Entrepreneurial or Learning orientations. Therefore, the chosen approach was to use the 'pure' customer orientation measure. In many other studies, it is also used alone,

and does also appear to be the most significant of the three dimensions of market orientation. In studies like this, which deal with multiple viewpoints on the same subject, a simple measure also helps to deal with validity issues, being 'clearly something' rather than 'everything at once'.

Entrepreneurial orientation was identified as having the best potential for capturing an approach that views the strategy of small businesses as the 'nature of the transformation process'. The article by Covin and Slevin (1989) developing the measure, suggests it is particularly suitable for dynamic environments such as the software industry. Additional dimensions of entrepreneurial orientation were also considered, and in the second data collection, indicators for 'competitive aggressiveness' were also collected. However, while these clearly represented a separate dimension, they did not affect any of the results, and so were dropped from the models in favour of the more parsimonious three-dimensional measure. Another option here, would have been to adapt the original strategic orientation scale formulated by Venkatraman (1989). However, entrepreneurial orientation was seen as more likely to be effective in capturing the strategic orientation of small businesses dominating the software industry, as well as providing yet another literary angle for the study, namely the point of view of entrepreneurship and small business research. In a way, what is being developed within this study as strategic orientation is in many ways similar to the idea of Venkatraman (1989), but constructs the idea of strategic orientation more flexibly, using more contemporary ingredients and complements that with the viewpoints from different streams of literature.

At the time of the first data collection, the conceptual idea was that entrepreneurial orientation enables firms to combine consideration of the customer and technology, and further, that learning is an outcome of the process and acts as a feedback loop that changes the way an organization operates. However, upon closer inspection of the learning orientation literature, it became apparent that learning orientation is not the same as organizational learning, but actually relates to the nature in which organizations approach the challenges of their transformation process, and is thus potentially an alternative or complementary process for entrepreneurial orientation. While the systematic literature review also revealed that there are very few studies investigating the relationship between entrepreneurialism and learning orientation, the focus of the second data collection, and subsequently, paper four, became that same relationship.

Yet, while careful consideration was made, the choice of measures remains an obvious limitation of the empirical articles, and further studies could extend the model with further dimensions and re-test the result using different scales. How-

ever, the literature review and the overall theoretical development, reflecting as they do more on the ideas underlying the measures, incorporate a more holistic view.

Strategy literature is full of different schools of thought (see e.g. Minzberg and Lampel 1999) that do not always mix well. However, while different orientations essentially appeared to share a common interest in explaining and predicting organizational performance at the level of business strategy, it seemed reasonable to expect that different views could be combined. It was to be expected that not everyone would be keen on mixing ideas from different theories, yet others might consider that a strength of the study. Developing the concept further, and validating better measures (instead of those adapted from prior studies in the empirical articles) for its dimensions, provides still more potential challenges for future research.

The study relies on two different sets of empirical data and while they are collected from the same sampling frame, the empirical proof for the conceptual idea would clearly be stronger if it had been possible to accommodate all four orientations within the same dataset. However, one of the important contributions of this piece relates to constructing a framework that can be further tested in future research. On the other hand, the second data collection provided an opportunity to delve into the little-studied relationship between entrepreneurial and learning orientation in isolation, a discussion that appears related to discussions on organizational ambidexterity. Future research on entrepreneurial – learning orientations could therefore also attempt to derive more from the exploration – exploitation discussion and link its constituent parts more tightly, and also to attempt to investigate entrepreneurial orientation together with the different types of learning using constructs like single vs. double-loop or adaptive vs. generative learning.

Complementary thinking as such has proved something of a challenge throughout and especially during the article publication processes. However, in this dissertation, customer orientation is not the opposite of technology orientation, any more than learning is the opposite of entrepreneurial orientation. While the opposite of entrepreneurial orientation may be a conservative strategic posture (Covin and Slevin 1989), the other binary oppositions are harder to locate. However it may be proposed here that the opposite of being customer oriented is not to have a technology orientation, (as the old product vs. market debate might suggest) but it must be something that is not interested in what produces customer value. Technology orientation has the idea of customer value built in. If one wishes to reflect the constructs through oppositions, learning could be contrasted with continuously repeating the same actions; while focus on technologies or products is opposed

by a strategic posture that is only interested in staying in existence, typified by a company uninterested in what it produces.

The strategic orientation literature in general appears relatively theoretical and may have few implications for the actual practice of management. The managerial implications of the empirical data may be limited to the software industry, and do not provide much of guidance for the more practical decision-making situations. However, strategic orientation as configuration, as presented here, may also serve as the basis for some practical implications. However, such practical applications need further development and validation with action research based methods. Future research could focus on making the concept a more practical, discussion tool that could be used by top management teams for assessing the current status and understanding of strategic orientation within the organization. Further on, gathering the views of the whole organization might also provide some interesting insights into understanding of the strategy outside of the managerial realm. Analysis of input from different respondents and of different functions or organizational levels could assist in developing a shared understanding of the strategy of the firm throughout the whole organization. However, it remains to be seen if strategic orientation is to become a useful tool for the practical management of organizations – not merely for assessing and understanding them.

While one has to be careful in extending the empirical results beyond the focal, Finnish software sector, it may still be appropriate to consider whether the results could apply to other dynamic, knowledge-intensive sectors. However, further study is clearly needed before we could speculate on the effectiveness of similar orientation configurations across industries and in other countries, yet the conceptual development and theoretical conclusions on the complementarity of different orientations certainly warrant further thought and empirical research efforts directed at other sectors of the economy.

# REFERENCES

Aboulafia, M. (2009). *The Stanford Encyclopedia of Philosophy (Summer 2009 Edition)*, entry on "George Herbert Mead". Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/sum2009/entries/mead/>.

Aloulou, W. & Fayolle, A. (2005). A conceptual approach of entrepreneurial orientation within small business context. *Journal of Enterprising Culture* 13:1, 24–45.

Ambrosini, V. & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management. *International Journal of Management Reviews* 11:1, 29–49.

Anderson, B.S., Covin, J.G. & Slevin, D.P. (2009). Understanding the relationship between entrepreneurial orientation and strategic learning capability: An empirical investigation, *Strategic Entrepreneurship Journal* 3, 218–240.

Appiah-Adu, K. & Singh, S. (1998). Customer orientation and performance: a study of SMEs. *Management Decision* 36:6, 385–394.

Arbnor, I. & Bjerke, B. (2009). *Methodology for Creating Business Knowledge*. 3rd edition. Sage Publications Inc.

Argyris, C. (1977). Double loop learning in organizations. *Harvard Business Review* 55, 115–125.

Argyris, C. & Schön, D.A. (1978). *Organizational Learning: A Theory of Action Perspective.* Reading, MA: Addison-Wesley.

Atuahene-Gima, K. & Ko, A. (2001). An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation. *Organization Science* 12:1, 54–74.

Atuahene-Gima, K., Slater, S.F. & Olson, E.M. (2005). The contingent value of responsive and proactive market orientations for new product program performance. *Journal of Product Innovation Management* 22:6, 464–482.

Baker, W.E. & Sinkula, J.M. (1999a). The synergistic effect of market orientation and learning orientation on organizational performance. *Academy of Marketing Science Journal* 27:4, 411–427.

Baker, W.E. & Sinkula, J.M. (1999b). Learning orientation, market orientation, and innovation: Integrating and extending models of organizational performance. *Journal of Market Focused Management* 4:4, 295–308.

Baker, W.E. & Sinkula, J.M. (2002). Market orientation, learning orientation and product innovation: Delving into the organization's black box. *Journal of Market Focused Management* 5:1, 5–23.

Baker, W.E. & Sinkula, J.M. (2009). The complementary effects of market orientation and entrepreneurial orientation on profitability in small businesses. *Journal of Small Business Management* 47:4, 443–464.

Barnard, C. (1938). *The Functions of the Executive*. 30th Anniversary edition 1968, Cambridge, MA: Harvard University Press.

Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management* 17, 99–120.

Barney, J.B. (1995). Looking inside for competitive advantage. *Academy of Management Executive* 9:4, 49–61.

Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of Management* 36:1, 256–280.

Barrett, H., Balloun, J. & Weinstein, A. (2005a). Success factors for organizational performance: Comparing business services, health care, and education. *S.A.M. Advanced Management Journal* 70:4, 16–28.

Barrett, H., Balloun, J. & Weinstein, A. (2005b). The impact of creativity on performance in non-profits. *International Journal of Nonprofit and Voluntary Sector Marketing* 10:4, 213–223.

Becherer, R.C. & Maurer, J.G. (1997). The moderating effect of environmental variables on the entrepreneurial and marketing orientation of entrepreneur-led firms. *Entrepreneurship: Theory and Practice* 22:1, 47–58.

Beer, S. (1979). *The Heart of Enterprise*. New York: Wiley.

Beer, S. (1981). *Brain of the Firm.* 2nd ed. New York: Wiley.

Beer, S. (1985). *Diagnosing the System for Organizations*. New York: Wiley.

Berry, M.M.J. (1996). Technical entrepreneurship, strategic awareness and corporate transformation in small high-tech firms. *Technovation* 16**:**9, 487–522.

Von Bertalanffy L. (1969). *General System Theory*. New York: George Braziller.

Berthon, P., Hulbert, J. & Pitt, L.F. (1999). To serve or create? Strategic orientations towards customers and innovation. *California Management Review* 42:1, 37–58.

Berthon, P., Hulbert, J. & Pitt, L. (2004). Innovation or customer orientation? An empirical investigation. *European Journal of Marketing* 38:9/10, 1065–1090.

Berthon, J.P., Pitt, L., Abratt, R. & Nel, D. (2008). Icon and markor: Links and performance in South African firms. *Journal of Applied Management and Entrepreneurship* 13:1, 15–34.

Bhuian, S.N., Menguc, B. & Bell, S.J. (2005). Just entrepreneurial enough: the moderating effect of entrepreneurship on the relationship between market orientation and performance. *Journal of Business Research* 58:1, 9–17.

Bowman, C. & Ambrosini, V. (1997). Using single respondents in strategy research. *British Journal of Management* 8, 119–131.

Braunscheidel, M.J. & Suresh, N.C. (2009). The organizational antecedents of a firm's supply chain agility for risk mitigation and response. *Journal of Operations Management* 27:2, 119–140.

Burrell, G. & Morgan, G. (1979). *Sociological Paradigms and Organizational Analysis, Elements of the Sociology of Corporate Life.* Gower Publishing.

Calantone, R.J. Cavusgil, S.T. & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management* 31:6, 515– 524.

Cano, C.R., Carrillat, F.A. & Jaramillo, F. (2004). A meta-analysis of the relationship between market orientation and business performance: evidence from five continents. *International Journal of Research in Marketing* 21:2, 179–200.

Celuch, K.G., Kasouf, C.J. & Peruvemba, V. (2002). The effects of perceived market and learning orientation on assessed organizational capabilities. *Industrial Marketing Management* 31:6, 545–554.

Checkland, P. (1981) *Systems Thinking, Systems Practice*. John Wiley & Sons Ltd.

Checkland PB. (2000). Soft systems methodology: a thirty year retrospective. *Systems Research and Behavior Science* 17, 11–58.

Child, J. (1972). Organizational structure, environment and performance, the role of strategic choice. *Sociology* 6**,** 1–22.

Churchman, C.W. (1968). *The Systems Approach*. New York NY: Dell Publishing Co.

Combe, I.A. (2006). *Strategic Orientations in Practice. Exploring the Strategy Belief Stuctures of Line-Managers Embedded in Practice*. Aston University.

Combs, J.G., Crook, T.R. & Shook, C.L. (2005). The dimensionality of organizational performance and its implications for strategic management research. In *Research Methodology in Strategy and Management*, Volume 2. Eds D.J. Ketchen Jr. & D.D. Bergh. Elsevier, pp. 259–286.

Covin, J.G., Green, K.M. & Slevin, D.P. (2006). Strategic process effects on the entrepreneurial orientation–sales growth rate relationship. *Entrepreneurship Theory and Practice* 30:1, 57–81

Covin, J.G. & Slevin, D.P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal* 10:1, 75–87.

Dawes, J. (1999). The relationship between subjective and objective company performance measures in market orientation research: Further empirical evidence. *Marketing Bulletin* 10, 65–75.

Day, G.S. (1994). The capabilities of market-driven organizations. *Journal of Marketing* 58:4, 37–52.

Day, G.S. (1999). Misconceptions about market orientation. *Journal of Market Focused Management* 4:1, 5–16.

Deshpandé, R., Farley, J.U. & Webster, F.E. Jr. (1993). Corporate culture, customer orientation and innovativeness in Japanese firms: A quadrad analysis. *Journal of Marketing* 57:1, 23–37.

Dess, G.G., Ireland R.D. & Hitt, M.A. (1990). Industry effects and strategic management research. *Journal of Management* 16:1, 7–27.

Dess, G.G. & Robinson, Jr. (1984). Measuring organizational performance in the absence of objective measures. *Strategic Management Journal* 5, 274–286.

Donaldson, L. (2001). *The Contingency Theory of Organizations*, Sage Publications Inc.

Doty, D.H., Glick, W.H. & Huber, G.P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal* 36:6, 1196–1250.

Dubrovsky, V. (2004). Toward system principles: General system theory and the alternative approach. *Systems Research and Behavioral Science* 21, 109–122.

Easterby-Smith, M., Lyles, M.A. & Peteraf, M.A. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management* 20, 1–8.

Easton, G. (2002). Marketing a critical realist approach. *Journal of Business Research* **55** pp. 103-109.

Eisenhardt, K.M. & Sull, D.N. (2001). Strategy as simple rules. *Harvard Business Review* 79:1, 106–116.

Farrell, M.A. & Oczkowski, E. (2002). Are market orientation and learning orientation necessary for superior organizational performance? *Journal of Market Focused Management* 5:3, 197–217.

Farrell, M.A. (2000). Developing a market-oriented learning organization. *Australian Journal of Management* 25:2, 201–222.

Foley, A. & Fahy, J. (2004). Towards a further understanding of the development of market orientation in the firm: a conceptual framework based on the market-sensing capability. *Journal of Strategic Marketing* 12:4, 219–230.

Frishammar, J. & Hörte, S.Å. (2007). The role of market orientation and entrepreneurial orientation for new product development performance in manufacturing firms. *Technology Analysis and Strategic Management* 19:6, 765–788.

Fritz, W. (1996). Market orientation and corporate success: findings from Germany. *European Journal of Marketing* 30:8, 59–74.

Gatignon, H. & Xuereb, J.M. (1997). Strategic orientation of the firm and new product performance. *Joumal of Marketing Research* 34:1, 77–90.

Gao, G.Y., Zhou, K.Z. & Yim, C.K.B. (2007). On what should firms focus in transitional economies? A study of the contingent value of strategic orientations in China. *International Journal of Research in Marketing* 24:1, 3–15.

Garvin, D.A. (1993). Building a learning organization. *Harward Business Review* 71:4, 78–91.

Glancey, K. (1998). Determinants of growth and profitability in small entrepreneurial firms. *International Journal of Entrepreneurial Behaviour & Research* 4:1, 18 –27.

Gresov, G. (1989). Exploring fit and misfit with multiple contingencies. *Administrative Science Quarterly* 34, 431-453.

Grinstein, A. (2008). The relationships between market orientation and alternative strategic orientations A meta-analysis. *European Journal of Marketing* 42:1/2, 115–134.

Gupta, A.K. & Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal* 27:1, 25–41.

Hambrick, D.C. (2004). The disintegration of strategic management: It's time to consolidate our gains. *Strategic Organization* 2:1, 91–98.

Hamel, G. & Prahalad, C.K. (1991). Corporate imagination and expeditionary marketing. *Harvard Business Review* 69:4, 81–92.

Hitt, M.A., Dacin, M. T., Tyler, B.B. & Park, B. (1997). Understanding the differences in Korean and U. S. executives' strategic orientations. *Strategic Management Journal* 18:2, 159–167.

Huber, G.P. (1991). Organizational learning: The contributing processes and the literatures. *Organization Science* 2:1, 88–115.

Huff, A.S., Floyd, S.W., Sherman, H.D. & Terjesen, S. (2009). *Strategic Management: Logic and Action*. John Wiley & Sons.

Hult, G.T.M., Hurley, R.F. & Knight, G.A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management* 33:5, 429–438.

Hult, G.T. & Ketchen, D.J. Jr. (2001). Does market orientation matter? A test of the relationship between positional advantage and performance. *Strategic Management Journal* 22:9, 899–906.

Izquierdo, C.C & Samaniego, M.J.G. (2007). How alternative marketing strategies impact the performance of Spanish museums. *The Journal of Management Development* 26**:**9, 809–831.

Jackson, M.C. (1991). *Systems Methodology for the Management Sciences*. New York: Plenum Press.

Jarzabkowski, P. (2004). Strategy as practice: Recursiveness, adaptation and practices-in-use. *Organization Studies* 24:3, 489–520

Jaworski, B. & Kohli, A. (1993). Market orientation: antecedents and consequences. *Journal of Marketing* 57:3, 53–70.

Jeong, I., Pae, J.H. & Zhou, D. (2006). Antecedents and consequences of the strategic orientations in new product development: The case of Chinese manufacturers. *Industrial Marketing Management* 35:3, 348–358.

Jiménez-Jiménez, D. & Cegarra-Navarro, J.G. (2007). The performance effect of organizational learning and market orientation. *Industrial Marketing Management* 36:6, 694–708.

Katz, D. & Kahn, R.L. (1966). *The Social Psychology of Organizations*. New York: Wiley.

Kaya, N. & Seyrek, I.H. (2005). Performance Impacts of Strategic Orientations: Evidence from Turkish Manufacturing Firms. *Journal of American Academy of Business Cambridge* 6:1, 68–71.

Keh, H.K., Nguyen, T.T.M. & Ng, H.P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing* 22:4, 592–611.

Keskim, H. (2006). Market orientation, learning orientation, and innovation capabilities in SMEs:An extended model. *European Journal of Innovation Management* 9:4, 396–417.

Ketchen, D.J. & Shook, C.L. (1996), The application of cluster analysis in strategic management research: an analysis and critique, *Strategic Management Journal* 17:6, 441–458.

Kirca, A.H., Jayachandran, S. & Bearden, W.O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing* 69:2, 24–41.

Kirzner, I. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature* 35, 60–85.

Knotts, T.L., Jones, S.C. & Brown, K.L. (2008). The effect of strategic orientation and gender on survival: A study of potential mass merchandising suppliers. *Journal of Developmental Entrepreneurship* 13:1, 99–113.

Kohli, A.K. & Jaworski, B.J. (1990). Market orientation: The construct, research propositions, and managerial implications. *Journal of Marketing* 54:2, 1–18.

Kropp, F., Lindsay, N.J. & Shoham, A. (2006). Entrepreneurial, market, and learning orientations and international entrepreneurial business venture performance in South African firms. *International Marketing Review* 23:5, 504–523.

Kurtinaitiene, J. (2005). Marketing orientation in the European Union mobile telecommunication market. *Marketing Intelligence and Planning* 23:1, 104–113.

Lee, T.S. & Tsai, H.J (2005). The effects of business operation mode on market orientation, learning orientation and innovativeness. *Industrial Management + Data Systems* 105:3/4, 325–348.

Li, J.J. (2005). The formation of managerial networks of foreign firms in China: The effects of strategic orientations. *Asia Pacific Journal of Management* 22:4, 423–443.

Li, Y., Liu, Y. & Zhao, Y. (2006). The role of market and entrepreneurship orientation and internal control in the new product development activities of Chinese firms. *Industrial Marketing Management* 35:3, 336–347.

Li, Y., Zhao, Y., Tan, J. & Liu, Y. (2008). Moderating Effects of Entrepreneurial Orientation on Market Orientation-Performance Linkage: Evidence from Chinese Small Firms. *Journal of Small Business Management* 46:1, 113–133.

Liu, S.S., Luo, X. & Shi, Y.Z. (2002). Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: an empirical study. *International Journal of Research in Marketing* 19:4, 367–382.

Liu, S.S., Luo, X. & Shi, Y.Z. (2003). Market-oriented organizations in an emerging economy: A study of missing links. *Journal of Business Research* 56:6, 481–491.

Lumpkin, G.T. & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* 21:1, 135–172.

Luo, X., Sivakumar, K. & Liu, S.S. (2005). Globalization, marketing resources, and performance: Evidence from China. *Academy of Marketing Science Journal* 33:1, 50–65.

Lyon, D.W., Lumpkin G.T. & Dess, G.G. (2000). Enhancing entrepreneurial orientation research: Operationalizing and measuring a key strategic decision making process. *Journal of Management* 26:5, 1055–1085.

Marinov, M., Cox, T., Avlonitis, G. & Kouremenos, T. (1993). Marketing approaches in Bulgaria. *European Journal of Marketing* 27:11, 35–46.

Mavondo, F.T., Chimhanzi, J. & Stewart, J. (2005). Learning orientation and market orientation: Relationship with innovation, human resource practices and performance. *European Journal of Marketing* 39:11/12, 1235–1263.

Merlo, O. & Auh, S. (2009). The effects of entrepreneurial orientation, market orientation, and marketing subunit influence on firm performance. *Marketing Letters* 20, 295–311.

Merriam-Webster (2009). Online dictionary at http://www.merriamwebster.com /dictionary/orientation (visited 4.6.2009).

Meyer, A.D., Tsui, A.S. & Hinings, C.R. (1993). Configurational approaches to organizational analysis. *Academy of Management Journal* 36:6, 1175–1195.

Minzberg, H. & Lampel, J. (1999). Reflecting on the strategy process. *Sloan Management Review* 40:3, 21–30.

Minzberg, H. & Waters, J.A. (1985). Of strategies, deliberate and emergent. *Strategic Management Journal* 6:3, 257–272.

Miles, M.P. & Arnold, D.R. (1991). The relationship between marketing orientation and entrepreneurial orientation. *Entrepreneurship: Theory and Practice* 15:4, 49–65.

Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy, Structure and Process*. New York: McGraw-Hill.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science* 29:7, 770–790.

Miller, D. (1986). Configurations of Strategy and Structure: Towards a Synthesis. *Strategic Management Journal* 7:3, 233–249

Morris, M.H. & Gordon, W.P. (1987). The relationship between entrepreneurship and marketing in established firms. *Journal of Business Venturing* 2:3, 247–259.

Morris, M.H., Coombes, S., Schindehutte, M. & Allen, J. (2007). Antecedents and outcomes of entrepreneurial and market orientations in a non-profit context: Theoretical and empirical insights. *Journal of Leadership and Organizational Studies* 13:4, 12–39.

Mulej, M., Kajzer, S., Potocan, V. & Rosi, B. (2006). Interdependence of systems theories – potential innovation supporting innovation. *Kybernetes* 35:7/8, 942–954.

Murphy, G.B. & Callaway, S.K. (2004). Doing well and happy about it? Explaining variance in entrepreneurs'stated satisfaction with performance. *New England Journal of Entrepreneurship* 7:2, 15–26.

Narver, J. & Slater, S. (1990). The effect of a market orientation on business profitability. *Journal of Marketing* 54:4, 20–35.

Narver, J.C., Slater, S.F. & MacLachlan, D.L. (2004). Responsive and proactive market orientation and new-product success. *Journal of Product Innovation Management* 21, 334–347.

Noble, C.H., Sinha, R.K. & Kumar, A. (2002). Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of Marketing* 66:4, 25–39.

Paladino, A. (2009). Financial Champions and masters of innovation: Analyzing the effects of balancing strategic orientations. *Journal of Product Innovation Management* 26, 616–626.

Parsons, T. & Smelser, N.J. (1956). *Economy and Society: a Study in the Integration of Economic and Social Theory*. London: Routledge and Kegan Paul Ltd. Reprinted in 1998 by Routledge.

Pearson, G.J. (1993). Business orientation: Cliché or substance? *Journal of Marketing Management* 9:3, 233–243.

Penrose, E. (1959). *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell.

Porter, M.E. (1980*). Competitive Strategy. Techniques for Analyzing Industries and Competitors*. Free Press.

Ray, G., J.B. Barney, & W.A. Muhanna (2004). Capabilities, business processes and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal* 25, 23–37.

Rhee, J., Park, T. & Lee, D.H. (2010). Drivers of innovativeness and performance for innovative SMEs in South Korea: Mediation of learning orientation. *Technovation* 30, 65–75.

Ringle, C.M., Wende, S. & Will, A. (2005). SmartPLS 2.0.M3. URL: http://www.smartpls.de, accessed 20.04.2010.

Ruokonen, M. & Saarenketo, S. (2009). The strategic orientations of rapidly internationalizing software companies. *European Business Review* 21:1, 17–41.

Rönkkö, M., Eloranta, E., Mustaniemi, H. Mutanen, O.P. & Kontio J. (2007). *Finnish Software Product Business: Results of the National Software Industry Survey 2007*, Helsinki University of Technology report available at www.swbusiness.fi (accessed 15.1.2010), ISBN 978-951-22-9040-6.

Salavou, H., Baltas, G. & Lioukas, S. (2004). Organizational innovation in SMEs: the importance of strategic orientation and competitive structure. *European Journal of Marketing* 38:9/10, 1091–1112.

Salavou, H. (2005). Do Customer and Technology Orientations Influence Product Innovativeness in SMEs? Some New Evidence from Greece. *Journal of Marketing Management*, **21**(3/4), pp. 307–338.

Santos-Vijande, M.L., Sanzo-Pérez, M.J., Álvarez-González, L.I. & Vázquez-Casielles, R. (2005). Organizational learning and market orientation: interface and effects on performance. *Industrial Marketing Management* 34:3, 187–202.

Schindehutte, M., Morris, M.H. & Kocak, A. (2008). Understanding market-driving behavior: The role of entrepreneurship. *Journal of Small Business Management* 46:1, 4–26.

Selznick, P. (1948). Foundations of the theory of organization, *American Sociological Review* 13:1, 25–35.

Senge, P.M. (1990). *The Fifth Discipline. The Art and Practice of the Learning Organization*. New York: Doubleday Currency.

Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *The Academy of Management Review* 25:1, 217–226.

Shaw, V. (2000). Successful marketing strategies of German companies in the UK. *European Journal of Marketing* 34:1/2, 91–106.

Shipley, D., Hooley, G., Beracs, J., Fonfara, K. & Kolos, K. (1995). Marketing organizations in Hungarian and Polish firms: part 1. *Journal of Marketing Practice* 1:2, 39–54.

Short, J.C., Payne, T. & Ketchen, D.J. (2008). Research on organizational configurations: Past accomplishments and future challenges. *Journal of Management* 34:6, 1053–1079.

Sinkula, J.M., Baker, W.E. & Noordewier, T. (1997). A framework for market-based organizational learning: Linking values, knowledge, and behavior. *Academy of Marketing Science Journal* 25:4, 305–318.

Skyttner, L. (1996). General systems theory: origin and hallmarks. *Kybernetes* 25:6, 16–22.

Slater S.F. & Narver J.C. (1995). Market orientation and the learning organization'. *Journal of Marketing* 59:3, 63–74.

Slater S.F. & Narver J.C. (2000). The positive effect of a market orientation on business profitability: A balanced replication. *Journal of Business Research* 48:1, 69–73.

Stacey, R.D. (2007) *Strategic Management and Organizational Dynamics. The Challenge of Complexity to ways of thinking about organizations*. 5th edition. England: Prentice Hall, Pearson Education Limited.

Suh, T. (2005). Exploring a global pattern of e-business activities and strategic orientation. *Journal of American Academy of Business Cambridge* 6:1, 309–314.

Tabachnick, B.G. & Fidell, L.S. (2007). *Using Multivariate Statistics.* Boston: Pearson.

Tajeddini, K. (2010). Effect of customer orientation and entrepreneurial orientation on innvoativeness: Evidence from the hotel industry in Switzerland. *Tourism Management* 31, 221–231.

Teece, D.J., Pisano, G. & Schuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal* 18, 509–533.

Tranfield, D., Denyer, D. & Smart, P. (2003). Towards a methodology for developing evidence informed management-knowledge by means of systematic review. *British Journal of Management* 14:3, 207–222.

Tzokas, N., Carter, S. & Kyriazopoulos, P. (2001). Marketing and entrepreneurial orientation in small firms. *Enterprise and Innovation Management Studies* 2:1, 19–33.

Voss, G.B. & Voss, Z.G. (2000). Strategic orientation and firm performance in an artistic environment. *Journal of Marketing* 64:1, 67–83.

Wang, C.L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship: Theory and Practice* 32:4, 635–657.

Wang, C.L. & Ahmed, P.K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews* 9:1, 31–51.

Wang, E.T.G. & Wei, H.L. (2005). The importance of market orientation, learning orientation, and quality orientation capabilities in TQM: an example from Taiwanese software industry. *Total Quality Management and Business Excellence* 16:10, 1161–1177.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality, and measurement. *Management Science* 35:8, 942–962

Whittington, R. (2006). Completing the practice turn in strategy research. *Organization Studies* 27:4, 613–634.

Wiklund, J. (1999). The sustainability of the entrepreneurial orientation – Performance relationship. *Entrepreneurship Theory and Practice* 24:1, 37–48.

Wiklund, J. and Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing* 20:1, 71–91.

www.softwareindustrysurvey.org (2010). Press release available at: http://www.softwareindustrysurvey.org/sites/default/files/Press_release_2009.pdf, last visited 2.9.2010.

www.swbusiness.fi (2010). What is software business available a thttp://www.swbusiness.fi/portal/cluster_information/__what_is_software_business_/, last visited 2.9.2010.

Zaharieva, E., Gorton, M. & Lingard, J. (2004). An evaluation of marketing practices and market orientation in the Bulgarian wine industry. *Post-Communist Economies* 16:2, 229–243.

Zahra, S.A. (2008). Being entrepreneurial and market driven: implications for company performance. *Journal of Strategy and Management* 1:2, 125–142.

Zehir, C. & Eren, M.S. (2007). Field research on impacts of some organizational factors on corporate entrepreneurship and business performance in the Turkish automotive industry. *Journal of American Academy of Business Cambridge* 10:2, 170–176.

Zhou, K.Z. Yim.C.K.B. & Tse, D.K. (2005). The effects of strategic orientations on technology- and market-based breakthrough innovations. *Journal of Marketing* 69:2, 42–60.

# PART 2 – ARTICLES

The second part of this dissertation contains the reprints of the original articles

# ARTICLES

[1] Hakala, H. (2010) Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial, and learning orientations. Forthcoming in *International Journal of Management Reviews,* Pending publication schedule. Early view available at Wiley online library http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-2370/ or http://dx.doi.org/10.1111/j.1468-2370.2010.00292.x

[2] Hakala, H. & Kohtamäki, M. (2011). Configurations of entrepreneurial-customer- and technology orientation: Differences in learning and performance of software companies. Forthcoming in *International Journal of Entrepreneurial Behaviour & Research* 17: 1.

[3] Hakala, H. & Kohtamäki, M. (2010). The interplay between orientations: Entrepreneurial, technology and customer orientations in software companies. Forthcoming in *Journal of Enterprising Culture* 8: 3.

[4] Hakala, H. (2010). The Relationship between Entrepreneurial and Learning Orientation: Effects on Growth and Profitability. An earlier version of the paper was presented and published at the proceedings of the FGF 14th Annual Interdisciplinary Entrepreneurship Conference, 21–22.10. 2010, Cologne, Germany.

The review articles numbers 1 and 4 are single authored. Articles 2 and 3 are co-authored with Dr. Marko Kohtamäki. The papers are a result of a genuine joint effort in data analysis and thinking. However, Henri Hakala as a lead author was more responsible for the theoretical development and for writing up these papers. Dr. Marko Kohtamäki was responsible for the project management, methodological development and the dataset utilised in these two papers.

# ARTICLE 1

# Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial, and learning orientations

Henri Hakala

**Abstract**

Market, technology, entrepreneurial and learning orientations have attracted major scholarly interest within their specific streams of literature for some decades. These strategic orientations are seen as principles that direct and influence the activities of a firm and generate the behaviours intended to ensure its viability and performance. Prior studies have argued that firms should develop and utilise multiple orientations, yet the relationship between different orientations has received only fragmented attention. This paper presents a systematic review of this literature, covering 67 scholarly articles published 1987–2010 that investigate multiple orientations. The paper contributes first by summarising the current state of knowledge on the interplay between these orientations. Many of these relationships have not been studied to any great degree and there are research gaps in the information available on the relationships between entrepreneurial, technology and learning orientation in particular. Secondly, the paper contributes to further theoretical and empirical enquiry by synthesizing the empirical findings into a three-approach framework. The *sequential*, *alternatives* and *complementary* ways of perceiving the relationship between orientations all suggest courses for further research. The sequential approach could further contribute by developing better constructs for explaining the orientation of the firm; while the alternatives approach could increase its relevance to management through the exploration of contingency settings and comparative studies. The complementary approach encourages discussion between researchers from the different streams of literature through the investigation of the relationships. It suggests focus on the investigation of both universal and contingency dependent orientation configurations.

---

Re-printed with permission of British Academy of Management and Blackwell Publishing. The article is available at http://dx.doi.org/10.1111/j.1468-2370.2010.00292.x.

# ARTICLE 2

# Configurations of entrepreneurial- customer- and technology orientation: Differences in learning and performance of software companies.

Henri Hakala – Marko Kohtamäki

## Abstract

**Purpose** – The aim of this paper is to identify groups of companies using different configuration of orientations, and compare the groups for differences in their performance and organizational learning capability. The paper proposes that organizational learning capability enables firms to utilise several strategic orientations simultaneously.
**Design/methodology/approach** –A sample of 164 Finnish software companies is clustered on the basis of their mix of customer (CO), technology (TO) and entrepreneurial orientation (EO). After validating the clusters, an analysis of variance is performed to detect differences in measures of performance and learning capability.
**Findings** – The paper provides evidence that firms combining several strategic orientations perform better than those focusing solely on customer orientation. The paper finds support for a proposal that software companies can be divided into three groups featuring different configurations of customer, technology and entrepreneurial orientation. The groups are termed: *servants* (high CO, low TO and low EO), *players* (intermediate levels of CO, TO and EO) and *integrators* (high levels of CO, TO and EO). Furthermore, the paper shows that these groups demonstrate differences in their organizational learning capability and performance.
**Research limitations/implications** – The paper refers to an empirical study of software companies in Finland. Further research in other countries and industry settings is needed to confirm and extend the results.
**Practical implications** – The identification of a successful mix of strategic orientations is a major challenge to management. The results urge software company managers to develop a culture that nurtures organizational learning. The paper suggests that managers should utilise aspects from several strategic orientations and create an appropriate mix of orientations that enables adaptation to dynamic business environments.
**Originality/value** – The paper provides insights into viable combinations of strategic orientations in the software industry and provides evidence for the differences in learning and performance for software company groups classified on the basis of their mix of orientations.

**Keywords:** Customer orientation; Technology orientation; Entrepreneurial orientation; Strategic orientation; Learning; Performance; Software industry

---

# 1 Introduction

Strategic orientations are the principles that direct and influence the activities of the firm and generate the behaviours that are essential for the performance of the firm (Gatignon & Xuereb, 1997). Different streams of literature have developed their own orientation constructs, such as customer orientation, entrepreneurial orientation and technology orientation, approaching the dilemma from their respective angles, but little research has investigated the combinations of these orientations together. For example, the marketing literature asserts that the concept of customer orientation is of tremendous importance, reflecting the culture of the organization that creates the behaviour which provides companies with continuous superior performance (Deshpandé, Farley and Webster, 1993; Kohli and Jaworski, 1990; Narver and Slater, 1990; Slater and Narver, 1995; 2000). While the positive effects of customer orientation on firm performance have been firmly established (e.g. Shoham *et al*., 2005; Cano *et al*. 2004; Kirca *et al*. 2005), it is not the only viable strategic orientation (Noble *et al*. 2002). The fundamental idea of technology orientation is that long-term success is best created through new technological solutions, products and services (Gatignon and Xuereb, 1997; Grinstein, 2008; Hamel & Prahalad, 1991). Furthermore, the proponents of entrepreneurial orientation suggest that organizations acting entrepreneurially are better able to adjust their operation in dynamic competitive environments (Covin and Slevin 1989), resulting in positive effects on firm performance (e.g. Hult *et al*., 2004; Wiklund, 1999; Wiklund and Shepherd, 2005). Recent research has suggested that the interplay between these strategic orientations may provide organizations with sustained competitive advantages (Hult *et al*., 2004). Companies that balance several orientations perform better (Atuahene-Gima and Ko, 2001; Bhuian *et al*. 2005; Noble *et al*., 2002).

Accordingly, the study follows on from the more general developments in management theory, from dichotomous models, (such as exploration vs. exploitation, market vs. hierarchies, market vs. product) to suggest simultaneous application of speciously contradictory mechanisms or orientations (March, 1991). Thus, by questioning the usefulness of the dichotomous approach towards orientations, we posit this study into a particular field of management research that considers the possibility that in companies, where the situations are far from being simple, the ones that succeed may be those that are able to stretch their resources and apply different orientations simultaneously. There is a tension between these three different orientations, when they are applied simultaneously, as they all have their unique cultural effect upon the behaviour of organizational members. Because of

these mixed messages, created by different effects that these orientations have, we introduce organizational learning as a mechanism that may enable the simultaneous application of these orientations.

Prior studies have investigated the effect of combining customer and entrepreneurial orientations (e.g. Atuahene-Gima and Ko, 2001; Bhuian *et al*. 2005) or the intersection between customer and technology orientations (e.g. Appiah-Adu & Singh, 1998; Berthon *et al*. 1999; 2004). However, there is a limited amount of empirical evidence investigating the effects of using the combination of customer, technology and entrepreneurial orientations simultaneously. The studies utilising these three orientations are purely conceptual (Aloulou & Fayolle, 2005) or promote different orientations for different market conditions (Kaya & Seyrek, 2005). Some studies investigate the separate effects of different orientations (Li, 2005; Zhou *et al*. 2005), rather than synergetic effect of the combination of orientations. These studies appear to consider orientations as alternatives, rather than as a complementary set of measures reflecting more complex cultures and behaviours. In line with this latter complementary train of thought, this paper proposes that organizational learning capability enables organizations to successfully combine several orientations. The argument here is that organizations with higher learning capability have an ability to view the organization and the surrounding environment through a wider-angled lens (Baker and Sinkula 1999a; 1999b). This could result from these organizations having a holistic worldview and ability to create an organizational culture that cherishes the differences between organizational members and accepts the different sets of thinking involved in being entrepreneurial, customer and technology oriented. The study argues that creation of this kind of holistic, tolerant and innovative culture leveraging the benefits of multiple orientations requires a capability for organizational learning. Furthermore, this resultant mix of orientations is seen to have synergetic effects that result in high levels of performance. We chose a single industry setting from the Finnish software industry that is showing some signs of maturing and is characterised by growth, emphasis on product and service development and attempts to internationalize (Rönkkö *et al*. 2007). This approach enabled not only to find companies that utilise several orientations simultaneously but also to consider the combinations of strategic orientations in the same competitive environment.

This paper extends the existing knowledge on the combined effects of several strategic orientations by addressing two interrelated research questions: *Which combinations of customer, technology and entrepreneurial orientation are viable in the Finnish software industry? Do the resulting groups differ in their organizational learning capability or performance?*

The paper sets out to explore the research questions by first building a research model from the theoretically possible combinations of customer, technology and entrepreneurial orientation. Subsequent empirical analysis utilises cluster analysis to analyze a dataset of 164 Finnish software companies to reveal the empirically viable combinations. Thereafter, the resulting clusters are compared for differences in organizational learning and performance. Finally, we discuss the implications for further research and managerial practice.

# 2 Orientations, performance and learning

The orientation of the business has attracted wide interest among scholars of entrepreneurship, management and marketing ( e.g. Covin and Slevin, 1989; Kohli and Jaworski, 1990; Narver and Slater, 1990; Slater and Narver, 1995; 2000; Venkatraman, 1989; Kirca *et al*., 2005; Wiklund, 1999; Wiklund & Shepherd, 2005). While the individual performance effects of different orientation constructs have been extensively studied (see e.g. Wiklund, 1999; Gatignon and Xuereb, 1997; Cano *et al*., 2004), this study builds on a more holistic idea, proposing that focus on one area of the business does not truly reflect the orientation of the business (Venkatraman, 1989). Prior research suggest that organizations focusing exclusively on implementing a single orientation tend to perform poorly in the long run (Pearson, 1993) and the utilisation of several orientations simultaneously results in better performance for the firms (Atuahene-Gima & Ko, 2001, Bhuian *et al*. 2005, Grinstein, 2008; Hakala & Kohtamäki, 2010). Schindehutte *et al*. (2008) argue that strategic orientations evolve dynamically over time and result in multiple orientations, thus we assemble our research framework through the combination of customer, technology and entrepreneurial orientations.

The underlying assumption of this paper is that organizations combining several orientations perform better than those focusing on a single orientation. This research considers the combinations entrepreneurial, technology and customer orientations as they emerge from the extant literature as particularly important to business performance.

Researchers debate, however, whether high levels of a particular orientation, for instance, entrepreneurial orientation are beneficial under all circumstances. A high degree of entrepreneurship may not be desirable under all market and structural conditions (e.g., Covin and Slevin, 1989). Also Li *et al*. (2008) found that the risk-taking dimension of entrepreneurial orientation in particular may not be beneficial to company performance. However, Atuahene-Gima and Ko (2001) propose that firms should display high levels of both market and entrepreneurial

orientation, while Bhuian *et al*. (2005) argues that moderate levels of entrepreneurship in combination with high levels of market orientation is optimal.

The intersection between customer and technology orientation has also been addressed previously. For example, Berthon *et al*. (1999) describe a successful dialogue between customers and technologies as the interact-mode. The two-dimensional framework utilises the metaphor of speech or conversation as an integrative element between customers and technologies. However, entrepreneurial values too may contribute towards the competencies required to benefit from market information (Bhuian *et al*., 2005), thus we perceive that the entrepreneurial orientation may provide organizations with the capabilities to proactively and innovatively utilise resources for improved performance.

*Orientations and organizational learning*

Slater and Narver (1995) suggest that both market orientation and entrepreneurial culture promote organizational learning. In addition, the recent study by Wang (2008) finds support for the assertion that entrepreneurial orientation has a positive impact on learning orientation that, in turn, has a positive impact on firm performance. However, the causality between orientations and learning has also been argued in different terms. Learning may be required to develop market orientation (Day, 1994a; 1994b) and frequently seen to enhance innovativeness and the capacity to understand and adopt new ideas (Damanpour, 1991; Hult *et al*., 2004).

Baker and Sinkula (1999a; 1999b) propose that market orientation facilitates adaptive learning, while the learning orientation of the firm creates generative learning. Market orientation is seen to direct the learning towards things that matter for the performance of the firm, while learning enhances the quality of market-oriented behaviour (Baker and Sinkula 1999a; 1999b). Thus, we posit that learning, while mediating the orientations, also enables firms to see important issues beyond customer orientation. Organizational learning is a capability that is required for open minded inquiry (Day 1994b), that the application of several orientations simultaneously, entails.

While there is convincing evidence for both views (Bell *et al*. 2002) and learning may have a two-way interaction with orientations, we suggest that learning capability enables companies to successfully combine different orientations that generate the performance enhancing behaviours. Thus, we investigate if organizations that combine several orientations are characterised by higher levels of organizational learning.

Very few papers investigate the interplay of more than two orientations simultaneously, thus we set out to explore first theoretically and then empirically the potential combinations of customer, technology and entrepreneurial orientations.

# 3 Research framework

Organizational learning is an embedded part of strategy formation and development in a small business (Wyer *et al*. 2000) Based on the assumption that organizations with high levels of learning capability are able to combine several orientations into a successful mix, the present study creates the following model (figure 1). The model is developed by drawing the dichotomies (customer vs. technology orientation, not customer oriented, not technology oriented, entrepreneurial vs. conservative) from the separate streams of orientation literature. However, the idea is that these strategies are not mutually exclusive but companies are able to mix these strategic orientations in any combination.

We use the dimensions of entrepreneurial, customer and technology orientation to form eight theoretical stereotypes for a software company. The low customer orientation groups are here referred to as *providers, speculators, inventors and exploiters*. Those combining higher levels of customer orientation with other orientations are named *servants, explorers, technicians and integrators.*

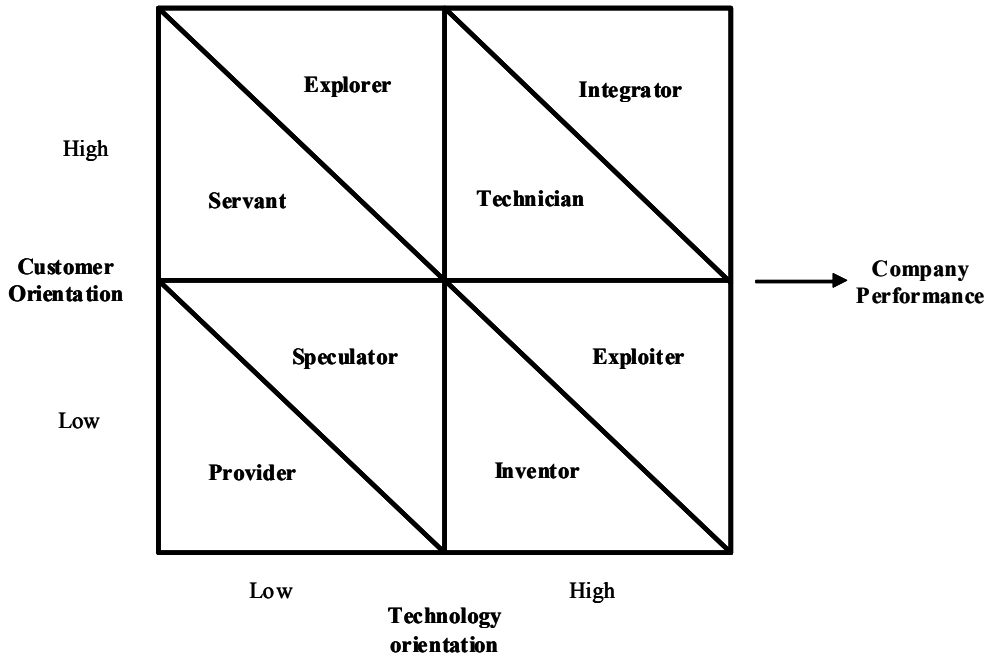



**Figure 1.** *The archetypes of companies based on the combination of customer, technology and entrepreneurial orientation. The combinations with higher levels of entrepreneurial orientation are in the triangles at top-right.*

The customer-oriented firm focuses on customer service and emphasises understanding customer needs and what drives customer satisfaction. The logic of these *servants*, companies that focus solely on the customer, is to serve customers so well that they become loyal and committed to repurchase. Marketing literature has long argued that market or customer orientation effectively creates the culture and behaviours for the organization that enable high levels of performance. (Deshpandé, Farley and Webster, 1993; Kohli and Jaworski, 1990; Narver and Slater, 1990; Slater and Narver, 1995; 2000). The customer orientation refers to a firm's ability to understand and create value for the target customer, and its positive effects on company performance have been confirmed, (see e.g. Cano *et al*., 2004; Kirca *et al*., 2005) with some exceptions derived from special circumstances such as not-for-profit theatres (Voss & Voss, 2000) or Turkish manufacturing firms (Kaya & Seyrek, 2005).

Entrepreneurially-oriented firms are characterised by their proactive, innovative and risk-taking cultures (Covin and Slevin, 1989; Wiklund, 1999; Wiklund and Shepherd, 2005; Bhuian *et al*., 2005). Past research suggests that entrepreneurial orientation positively affects performance (e.g. Hult *et al*., 2004; Wiklund, 1999; Wiklund and Shepherd, 2005) as well as start-up decisions of international ventures (Kropp *et al*. 2008) among other things. We have termed singularly entrepreneurial firms, as *speculators* to reflect the active and aggressive features that these firms use to adapt to and survive in dynamic competitive environments. These firms display entrepreneurial orientation and are thus innovative and proactive risk-takers but without a strong tendency towards technology or customer orientation.

However, previous studies have found that entrepreneurial culture and customer orientation are interlinked (Slater & Narver, 1995; 2000) and in combination provide a company with better performance (Atuahene-Gima & Ko, 2001, Bhuian et. al., 2005; Li *et al*., 2008). These *explorers* combine a strong entrepreneurial orientation with high levels of customer orientation. Explorers have a great ability to proactively manage environments but also to respond to customer needs. They can not only serve existing customers well but also create new customers and alter the competitive landscape (Atuahene-Gima and Ko, 2001) Explorers create partnerships and proactively develop customer relationships, take risks and innovate in terms of their business model and services they provide, but may not make the investments in high technology that would be reflected by a true technology orientation.

Technology orientation refers to the tendency to utilise and develop new technologies or products (Gatignon and Xuereb, 1997). The logic of these technological

*inventors* is to actively develop and incorporate new technology in products, to aspire to a superior technological capability to their competitors and find customers that value the solutions they provide. Prior study has developed a typology of technology-based entrepreneurs (Jones-Evans, 1995) and found that their companies also differ in terms of strategy (Jones-Evans, 1996). While technology-based companies differ in their strategies, they may also differ in terms of strategic orientation. Technology oriented firms do not need to be exclusively technology oriented but may display both customer and technology orientation. However, without entrepreneurial behaviour they are perceived as lacking integrative capability. These *technicians* understand the customers and develop new technologies, but do not necessarily match the two, due to the lack of entrepreneurial orientation. These firms carry the cost of both technology and customer specific investments without fully benefiting from them.

The combination of entrepreneurial and technology orientations creates the entrepreneurial *exploiter* type. These firms are proactive risk-takers utilising and developing cutting edge technology. However, while they display a low tendency to understand the customers, their ventures are likely to be very high risk, and success in the market place a fortuitous event.

The software companies utilising all three dimensions of the framework are the true *integrators* of complex cultures. They do understand customers; have the latest technology and entrepreneurial drive to continuously find new business opportunities. Irrespective of whether companies started-up as technology based or as a result of a non-technical market opportunity, we argue, along with Boussouara and Deakins (1999) that these companies have learned to integrate their strategy to encompass elements from customer, technology and entrepreneurial orientations. The firms have developed a more complex organizational culture and strategy that directs the entrepreneurial proactive, innovative and risk-taking behaviours to merge technology with customer preferences and satisfaction.

The firms displaying no tendencies towards any of the orientations are here termed *providers*, to reflect their conservative rather than entrepreneurial stance in terms of both customers and technological developments. The provider companies display no strong tendency to understand customers, implement new technologies or act entrepreneurially. They lack proactivity and innovativeness, but do standard jobs to their customers' requirements.

These stereotypes are purely theoretical; however, they do represent the possible combinations that may be formed using customer, technology and entrepreneurial orientations. The following sections explore if any of these are found in the context of the Finnish software industry.

# 4 Research methodology

*Methodology, sample and data collection*

The study applies non-hierarchical cluster analysis and the k-means method utilising SPSS (version 15) software. The research question of the paper is to identify and compare the groups of companies utilising the different configurations of orientations and thus cluster analysis was deemed appropriate. Cluster analysis is an explorative method and in the k-means technique the cases are clustered into homogenous groups by using the criteria assigned by the researchers (Ketchen and Shook, 1996). Cluster analysis groups cases into clusters by minimizing the statistical variance within clusters and maximising the variance between the clusters. In this study, cases are clustered following the research model and hence by using the composite variables of the three orientations (customer, technology and entrepreneurial). Various cluster solutions were tested, but the three-cluster solution was selected as it was seen as the most informative and is also supported by the prior theory suggesting that three viable strategic orientations exist within any industry (Miles and Snow, 1978). Also, the three clusters seemed to differ in terms of organizational learning and company performance, which again suggested that three-cluster solution provides basis for meaningful interpretations. Moreover, according to the configurational contingency approach, only those forms which are viable can be identified in the empirical world (Gerdin and Greve, 2004). The cluster analysis recognises some groups and ignores some potential ones; suggesting that the ones being found are interpreted as viable. Thus, if a combination of strategic orientations is not found in the empirical world, the approach would suggest that such a combination is not viable.

The study compares the groups resulting from the cluster analysis by using the one-way ANOVA. In order to study how clusters vary in terms of organizational learning and company performance, both the individual items and the respective composite variables are investigated for statistically significant differences between the clusters. Tukey's post hoc analysis is used to test which clusters differ from each other in terms of organizational learning and company performance (Tabachnick and Fidell, 2007).

The sampling frame (n=1283) of software companies was drawn from the official Statistics Finland database, and includes all Finnish software companies with over 5 employees liable for Value Added Tax. Software industry was chosen due to three main reasons: Firstly, the phenomenon is easier to capture in small and medium-sized companies of which the software industry is known of. Secondly, all the orientations being applied in this study are presumably relevant for software

companies and hence can be found. Thirdly, since software industry is known to be dynamic and uncertain, software companies might need the ability to apply different orientations simultaneously in order to survive.

The questionnaire that was sent out to managing directors in September 2008 prompted 164 usable responses (Response rate 13%). Due to our limited response rate, we decided to control the potential effect of non-respondent bias by comparing the first one third of respondents to the last one third on the key study variables and the available demographic variables (Armstrong and Overton, 1977; Werner, Praxedes and Kim, 2009). The fact that the two groups of early and late respondents did not differ statistically significantly shows the data is satisfactorily free from nonresponse bias.

Average annual turnover of the respondent firms was 2.9m euro. Of those companies, 64% report having their own software products, while 53% reported being consulting and training business, as 67% report providing various maintenance or user support services. On average the respondent firms have around 500 customers each, but their single largest customer typically represents 26% of the total revenue. Hence, many of these companies are somewhat dependent on their most important customer.

*Measurement of variables*

The measurement items used are developed on the basis of previous studies and reported in appendix A. The research model consists of five constructs, customer orientation, technology orientation, entrepreneurial orientation , organizational learning and performance. The present study measures items on a five-point Likert-scale (1=fully disagree, 5=fully agree), thus variables reflect the respondent's perceptions rather than indisputable facts. The study employs both SPSS and structural equation modelling (PLS) to test the measures. Cronbach's alpha, composite reliability values and average variance extracted (AVE) are derived for each of the measures before finally inspecting skewness and kurtosis values as well as checking for possible common method variance (Chin, 1998).

The study measures customer orientation by five different items. The items were adapted from Li *et al*. (2008), who also tested the scales. The items are consistent with Narver and Slater's (1990) construct of customer orientation, measuring the emphasis on the company's customer satisfaction index, the understanding of customer needs, and the levels of customer satisfaction, customer service and customer commitment. The five items are tested for reliability using Cronbach's alpha (.785), composite reliability (.853) and average variance extracted (AVE)

(.538 ) values. The items are satisfactory, exceeding typical threshold values for Cronbach's alpha (>.7), composite reliability (>.7) and AVE (>.5) (Chin, 1998; Cool, Dierickx and Jemison, 1989).

The items for technology orientation were adapted from Derozier (2003) and measure the level of technology in the company's products, activity in developing new technologies, urge to develop new technological solutions to respond to customer needs, the level of technological know-how in comparison to competitors, and the ambition of its product development programs. The construct achieves highly satisfactory Cronbach's alpha (.865), composite reliability (.903) and average variance extracted (.650) values.

For entrepreneurial orientation, a total of 12 measures were utilised on three different dimensions, namely, the company's proactivity, innovativeness and risk-taking. Items were reduced to one dimension of entrepreneurial orientation. The dimensions and items are based on Covin and Slevin (1989) and Wiklund (1999). The composite variable of entrepreneurial orientation received satisfactory Cronbach's alpha (.78), composite reliability (.87) and AVE (.70) values.

Organizational learning is measured by four items based on Garvin (1993). The items measure experimentation, learning from past experience and knowledge sharing. Items attain satisfactory Cronbach's alpha (.700), composite reliability (.830) and AVE (.619) values.

Company performance is measured by three variables, which measure the owners' satisfaction with their company's performance, profitability and growth in comparison to its competitors. The measures for this reflective construct are adapted from previous studies (Gibson and Birkinshaw, 2004; Wolff and Pett, 2006). Items show satisfactory values for Cronbach's alpha (.700), composite reliability (.830) and AVE (.619).

**Table 1.** *Cronbach's alpha, composite reliability and AVE values of each item.*

| | Cronbach's alpha | Composite reliability | AVE |
|---|---|---|---|
| Entrepreneurial orientation | .78 | .87 | .70 |
| Customer orientation | .79 | .86 | .54 |
| Technology orientation | .87 | .90 | .65 |
| Learning | .81 | .88 | .64 |
| Performance | .70 | .83 | .63 |

We assess the discriminant validity both at the item and construct level. Our analysis of indicator cross-loadings reveals that items load at their highest with their respective constructs and none of the items load higher on any other construct, which shows item discriminant validity (Chin, 1998). Construct discriminant validity is assessed by analyzing whether AVE values exceed the squared latent variable correlations (Chin, 1998). The analysis shows that discriminant validity is satisfactory also at the construct level. In addition we tested the constructs for skewness and kurtosis. The analysis shows that the constructs are satisfactory in comparison to typical threshold values (< 1) (Tabachnick and Fidell, 2007). Finally we applied Harman's (1976) one-factor test to confirm that common method variance is not present in the data (Podsakoff and Organ, 1986). In all, we can conclude that the items and constructs are suitable for the analysis.

# 5 Analysis and results

The correlation matrix (Table 2) illustrates that all the constructs correlate statistically significantly. The highest correlation (.70) between the independent variables (market orientation, technology orientation and entrepreneurial orientation) is satisfactorily below the multicollinearity threshold (< .9). Also Vif-index was utilised to test the multicollinearity between the independent variables. This test showed that the values for each independent variable stayed well below 2.1, while the multicollinearity threshold is 10. Thus it was concluded that multicollinearity does not constitute a problem in this data.

**Table 2.** *Correlation matrix*

| | Entrepreneurial orientation | Customer orientation | Technology orientation | Organizational learning | Performance |
|---|---|---|---|---|---|
| Entrepreneurial orientation | 1 | | | | |
| Customer orientation | .29** | 1 | | | |
| Technology orientation | .70** | .25** | 1 | | |
| Organizational learning | .32** | .40** | .30** | 1 | |
| Performance | .29** | .41** | .21** | .34** | 1 |

**. Correlation is significant at the 0,01 level (2-tailed)

The result of the cluster analysis is reported in table 3. Three clusters which vary in terms of their mix of customer, technology and entrepreneurial orientation were found and designated as *integrator*, *player* and *servant*. While clusters are reported in columns, rows present the three strategic orientations that were used as criteria when clustering the cases. The number of cases in a given cluster is reported in table 3.

**Table 3.** *Average scores of orientations of different clusters (figures are average scores of respondents' responses on Likert scale of 1 to 5).*

| Strategic orientations | Clusters | | |
|---|---|---|---|
| | ***Integrators*** | ***Intermediate Players*** | ***Servants*** |
| Entrepreneurial orientation | 3.85 | 3.11 | 2.10 |
| Technology orientation | 4.20 | 3.07 | 1.99 |
| Customer orientation | 4.28 | 3.93 | 3.64 |
| Number of cases | n =59 | n =78 | n =27 |

The integrators cluster includes companies that apply all three strategic orientations simultaneously. They attain high values for all the different orientations, entrepreneurial, technology and customer. The second cluster consists of intermediate companies applying a relatively high customer orientation, but moderate entrepreneurial and technology orientations. They are called players here as they are viewed to be 'playing the field' in the markets. They are perceived as somewhat ambitious in terms of their technological orientation. Players keep their eyes open for entrepreneurial opportunities while focusing on serving the customers. These companies seem to use a middle range approach in comparison to integrators and *servants*. Servants are companies that achieve very low values on their entrepreneurial and technology orientations, but moderate to high values in terms of customer orientation. The name 'servant' is thought appropriate due to the tendency of such firms to focus on serving customers, but not on finding new opportunities (entrepreneurial orientation) or developing new technologies (technology orientation).

Following the cluster analysis, the three clusters were mean-compared using ANOVA for differences in organizational learning and company performance. Table four reports the results of the mean comparison. The result of the mean comparison between the three clusters shows that the difference between the clusters is statistically significant in both the composite variables of organizational learning and company performance. Analysis of the individual items illustrates

that for two items for learning (sharing of thoughts, goals and ideas, valuation of ideas & tolerance for mistakes) the variance is statistically significant between the clusters. Learning from mistakes and information sharing do not appear to differ significantly between the clusters. The integrators score highest on organizational learning and the servants display the lowest level of organizational learning. Growth is the only individual item of company performance that differs significantly between the clusters while variances in owners' satisfaction and profitability in comparison to competitors are not statistically significant. However, the differences in the overall average performance measure are statistically significant. The results reveal that the integrator companies are the best performers, while players are not far behind, and the servants clearly get the lowest score. The evidence thus suggests that companies need to be more than just customer oriented and utilise a number of orientations simultaneously.

**Table 4.** *Average scores of different groups in terms of learning (scores are averages of the respondents' responses measured on a Likert scale from 1 to 5).*

| | ***Integrators*** | ***Intermediate Players*** | ***Servants*** | **p-value** | **Tukey's *post hoc*** |
|---|---|---|---|---|---|
| **Learning** | 4.37 | 4.12 | 3.78 | .000 | a) |
| Learning from experiences | 4.37 | 4.12 | 3.78 | .051 | c) |
| Information sharing | 4.45 | 4.35 | 4.04 | .065 | ns. |
| Sharing of thoughts, goals and ideas | 4.40 | 3.94 | 3.79 | .000 | c) |
| Valuation of new ideas and tolerance for mistakes | 4.29 | 4.01 | 3.40 | .000 | b) |
| **Performance** | 3.38 | 3.22 | 2.81 | .018 | c) |
| Owners satisfaction | 3.51 | 3.42 | 3.09 | .198 | ns. |
| Profitability in comparison to competitors | 3.32 | 3.28 | 3.19 | .864 | ns. |
| Growth in comparison to competitors | 3.29 | 2.97 | 2.15 | .000 | b) |

a) = Differences are statistically significant between all cluster pairs at a significance level of <0.05
b) = Differences are statistically significant between Integrators and Servants and Players and Servants but not between Integrators and Players at a significance level of <0.05
c) = Difference is statistically significant between Integrators and Servants at a significance level of <0.05
ns. = Differences are statistically non-significant between cluster pairs.

To verify the results of the mean comparison, Tukey's ANOVA *post hoc* analysis was used to confirm the differences in learning and performance between the clusters. The *post hoc* analysis verifies that organizational learning varies statistically significantly between all the different clusters. The performance differences in *post hoc* tests appear to be relatively small, as only integrators and servants differ statistically significantly from each other. The variances are non-significant between the other cluster pairs. In terms of performance the accurate interpretation appears to be that high level customer, technology and entrepreneurial orientation are required to maintain superior performance in comparison to companies that are only customer oriented.

# 6 Discussion

Three different types of software companies that emerged from the empirical data as a result of cluster analysis are depicted in figure 2.

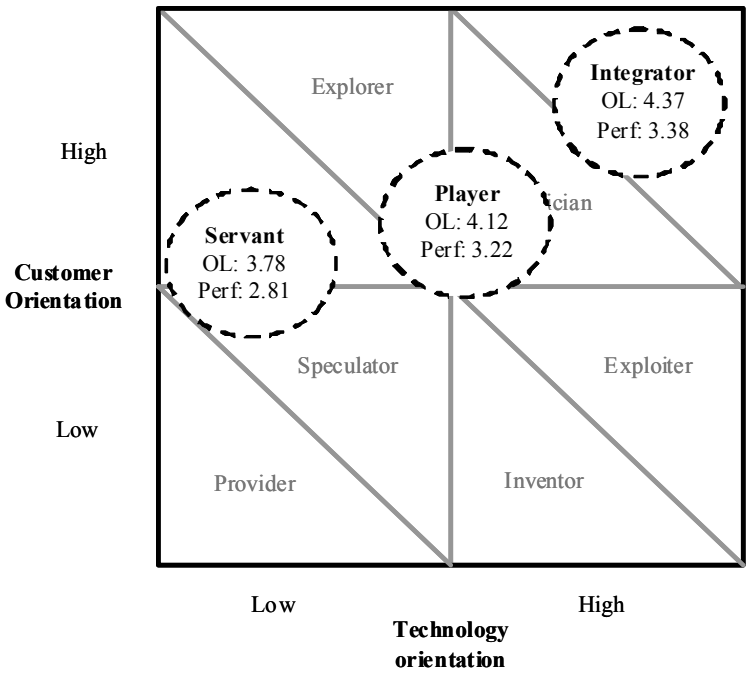



**Figure 2.** *Three types of companies emerged from the Finnish software industry. They differ in terms of their mix of customer, technology and entrepreneurial orientation, learning and performance*

*Servants* focus solely on customer service, satisfaction and needs, but are conservative rather than entrepreneurial in their operations and utilise established technologies. They provide customers with standard products that meet the customers' current preferences. Servants are characterised by low levels of organizational learning. The servant strategy still appears viable; however, these companies do not display much growth and generally perform worse than *integrator* companies. Integrator companies, empowered by their high levels of organizational learning capability, successfully combine elements from customer, technology and entrepreneurial orientations. The software companies with an integrator strategy perform better than their servant competitors, and integrate the customer needs with new technologies through entrepreneurial proactivity, innovation and risk-taking. Integrators serve, shape and create their environments resulting in growth through innovations and products that meet both current customer needs and create new opportunities. The third group of companies that emerged from the data does not fall into the theoretical typology presented earlier in this paper. These intermediate *players* appear to have chosen the customer oriented strategy but support it with moderate focus on technology and with some entrepreneurial spirit. The organizational learning in these companies is also clearly in between that of integrators and servants. These firms may be on their way there, and should enhance the processes of learning in order to become true integrators. The performance difference, however, between Players and Integrators is not statistically significant. Thus, in the light of the findings of this study, we cannot confirm whether high levels of customer orientation with moderate levels of technology and entrepreneurial orientation suffice (see Bhuian et. al 2005) or are high levels of each orientation more advantageous (Atuahene-Gima & Ko, 2001).

Results display that integrator companies have a highest learning capability. Thus, the result may be interpreted to support our theoretical reasoning that learning capability enables companies to apply several orientations simultaneously. Assuming that learning capability is one of the distinguishing factors of more capable entrepreneurs; our results support that these integrators of several orientations operate faster growing businesses.

In addition the results indicate that companies that are able to develop a balanced mix of strategic orientations perform better. The idea that orientations have synergetic effects on performance has been presented before, (Atuahene-Gima and Ko, 2001, Bhuian *et al*. 2005) but not studied by simultaneous application of customer, technology and entrepreneurial orientation that complement each other.

Our result also put forward that majority of the software companies utilise several orientations simultaneously. While customer orientation alone appears as viable

strategic orientation, the evidence suggests that firms combining it with other orientations have higher learning capability and perform somewhat better. The result thus allow the judgment that empirically the companies are not choosing between alternative orientations from a particular school of thought but rather mixing, matching and combining them liberally to support their strategy and performance.

*Limitations, implications for managers and further research*

The study is subject to the usual limitations with cross-sectional, single industry research design with a limited sample, single informant and subjective measures. However, the single industry setting also provides specific information on strategic orientation combinations of software companies and the study makes no claim to generalise the findings beyond that. Evidence from different and across industries is required to generalise the propositions of the research framework at a broader level. Longitudinal research settings would be required to explain any shifts in the mix of orientations over time or appropriate mixes in other economic conditions.

Whether organizational learning enables companies to combine orientations or orientation combinations cause organizations to learn is also an issue that cannot be established with the methodology utilised. Further research is needed with other methodologies to investigate the integrative role of learning. Furthermore, this study does not provide any insight into the causalities between the studied orientations or explain any specific gains for adding certain orientation into the configuration. The investigation into orientation configurations and if they generate something more than the sum of the individual orientations would need to be addressed in future studies using different methodology.

Company cultures and strategy cannot be fully encapsulated in a single orientation, and thus, the future research on orientations should focus on investigating the viable combinations of orientations in different industries and markets, in order to enhance our understanding of the complex cultures supporting the performance of firms. Our results should be considered in the light of the difficulty of differentiating between the technology orientation and the innovativeness dimension of entrepreneurial orientation. While the statistical tests show satisfactory discriminant validity between the items and constructs, the underlying phenomenons are difficult to distinguish in practice. Therefore development of more differentiated measurements for innovation and technology orientation should be focused on in future studies.

However, despite the difficulties and uncertainties, the paper will make an important contribution to managerial practice. The results urge software company managers to develop a company culture that nurtures a holistic view of business. Simply focusing on customers is not enough, and while the strategic orientations are very different in nature, their successful combination appears to be accompanied by the learning capability of the organization. The identification of the successful mix of orientations is a major challenge, however, software companies should aspire to high levels of customer orientation and moderate to high levels of entrepreneurial and technology orientations. We suggest that coping with this multifaceted and complex company culture requires organizational learning capabilities which in turn, will enable the firm to nurture a mix of orientations that fits both the firm's characteristics and its environment and eventually leads to an elevated company performance.

## References

Aloulou, W. and Fayolle, A. (2005), "A conceptual approach of entrepreneurial orientation within small business context", *Journal of Enterprising Culture*, Vol. 13 No. 1, pp. 24-45.

Appiah-Adu, K. and Singh, S. (1998), "Customer orientation and performance: a study of SMEs", *Management Decision*, Vol. 36 No. 6, pp. 385-394.

Armstrong, J. S. and Overton, T. S. (1977), "Estimating nonresponse bias in mail surveys", *Journal of Marketing,* Vol. 14 No. 3, pp. 396-402.

Atuahene-Gima, K. and Ko, A. (2001), "An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation", *Organization Science*, Vol. 12 No. 1, pp. 54-74.

Baker, W.E. and Sinkula, J.M. (1999a), "The synergistic effect of market orientation and learning orientation on organizational performance", *Academy of Marketing Science Journal*, Vol. 27 No. 4, pp. 411-427.

Baker, W.E. and Sinkula, J.M. (1999b), "Learning Orientation, Market Orientation, and Innovation: Integrating and Extending Models of Organizational Performance", *Journal of Market Focused Management*, Vol. 4 No.4, pp. 295-308.

Bell, S.J., Whitwell, G.J. and Lukas B.A. (2002), "Schools of thought in organizational learning", *Journal of the Academy of Marketing Science*, Vol. 30 No.1, pp. 70–86.

Berthon, P., Hulbert, J. and Pitt, L.F. (1999), "To Serve or Create? Strategic orientations towards customers and innovation", *California Management Review*, Vol. 42 No.1, pp. 37-58.

Berthon, P., Hulbert, J. and Pitt, L. (2004), "Innovation or customer orientation? An empirical investigation", *European Journal of Marketing*, Vol. 38 No. 9/10, pp. 1065-1090.

Bhuian, S.N., Menguc, B. and Bell, S.J. (2005), "Just entrepreneurial enough: the moderating effect of entrepreneurship on the relationship between market orientation and performance", *Journal of Business Research*, Vol 58 No.1, pp. 9-17.

Boussouara, M. and Deakins, D. (1999), "Market-based learning, entrepreneurship and the high-technology small firm" *International Journal of Entrepreneurial Behaviour & Research*, Vol. 5 No. 4, pp. 204-223.

Chin, W.W., (1998), "The Partial Least Squares Approach to Structural Equation Modeling", in G.A. Marcoulides (Ed.), *Modern Methods for Business Research*. Lawrence Erlbaum, Mahwah, pp. 295–336.

Cano, C.R., Carrillat, F.A. and Jaramillo, F. (2004), "A meta-analysis of the relationship between market orientation and business performance: evidence from five continents", *International Journal of Research in Marketing*, Vol. 21 No.2, pp. 179–200.

Cool, K., Dierickx, I. and Jemison, D. (1989), "Business Strategy, Market Structure and Risk-Return Relationships: A Structural Approach", *Strategic Management Journal,* Vol. 10 No. 6 pp. 507–522.

Covin, J.G., Slevin, D.P. (1989), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, Vol. 10 No.1, pp. 75–87.

Damanpour, F. (1991), "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators", *Academy of Management Journal*, Vol. 34, No. 3, pp. 555-590.

Day, George S. (1994a), "Continuous learning about markets" *California Management Review*, Vol. 36 No. 4, pp. 9-31.

Day, George S. (1994b), "The capabilities of Market-Driven Organizations", *Journal of Marketing,* Vol. 58 No. 4, pp. 37-52.

Deshpandé, R., Farley, J.U., and Webster, F.E.Jr. (1993), "Corporate Culture, Customer orientation and innovativeness in Japanese Firms: A Quadrad Analysis", *Journal of Marketing*, Vol. 57 No. 1, pp. 23–37.

Derozier, C. (2003), *Marketing creativity in new product development: The role of market orientation, technology orientation, and inter-functional coordination.* Doctoral dissertation, Texas Tech University, Ann Arbor: Proquest Information and Learning. UMI Number: 3083376.

Garvin, D.A. (1993), "Building a Learning Organization", *Harward Business Review*, Vol. 71 No. 4, pp. 78-91.

Gatignon, H. and Xuereb, J.M. (1997), "Strategic Orientation of the Firm and New Product Performance", *Joumal of Marketing Research*, Vol. 34 No.1, pp. 77–90.

Gibson, C.B. and Birkinshaw, J. (2004), "The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity", *Academy of Management Journal,* Vol. 47 No. 4, pp. 209–226.

Gerdin, J. & Greve, J. (2004), "Forms of contingency fit in management accounting research–a critical review", *Accounting, Organizations and Society*, Vol. 29 No.3-4, pp. 303-326.

Grinstein, A. (2008), "The relationships between market orientation and alternative strategic orientations A meta-analysis", *European Journal of Marketing*, Vol. 42 No. 1/2, pp. 115–134.

Hakala, H. and Kohtamäki, M. (2010)," The interplay between orientations: Entrepreneurial, technology and customer orientations in software companies", *Journal of Enterprising Culture*. Vol. 18 No. 3. Forthcoming.

Hamel, G. and Prahalad, C. K. (1991), "Corporate Imagination and Expeditionary Marketing", Harvard *Business Review*, Vol. 69 No.4, pp. 81–92.

Harman, H.H. (1976), *Modern Factor Analysis,* University of Chicago Press, Chicago.

Hult, G.T.M., Hurley, R.F. and Knight, G.A. (2004), "Innovativeness: Its antecedents and impact on business performance", *Industrial Marketing Management*, Vol. 33 No. 5, pp. 429-438.

Jones-Evans, D. (1995), "A typology of technology-based entrepreneurs: a model based on previous occupational background", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 1, No. 1, pp. 26-47.

Jones-Evans, D. (1996), "Technical entrepreneurship, strategy and experience", *International Small Business Journal*, Vol. 14, No. 3, pp. 15-39.

Kaya, N. and Seyrek, I.H. (2005), "Performance Impacts of Strategic Orientations: Evidence from Turkish Manufacturing Firms", *Journal of American Academy of Business, Cambridge*, Vol. 6 No. 1, pp. 68-71.

Ketchen, D. J. & Shook, C. L. (1996), "The application of cluster analysis in strategic management research: an analysis and critique", *Strategic Management Journal*, Vol. 17 No. 6, pp. 441-458.

Kirca, A.H., Jayachandran, S. and Bearden, W.O. (2005), "Market Orientation: A Meta-Analytic Review and Assessment of Its Antecedents and Impact on Performance", *Journal of Marketing*, Vol. 69 No. 2, pp. 24–41.

Kohli, A.K. and Jaworski, B.J. (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications", *Journal of Marketing*, Vol. 54 No. 2, pp. 1–18.

Kropp, F., Lindsay, N.J. and Shoham, A (2008), "Entrepreneurial orientation and international entrepreneurial business venture startup", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 14, No. 2, pp. 102-117.

Li, J.J. (2005), "The Formation of Managerial Networks of Foreign Firms in China: The Effects of Strategic Orientations" *Asia Pacific Journal of Management*, Vol. 22 No. 4, pp. 423-443.

Li, Y., Zhao, Y., Tan, J. and Liu, Y. (2008), "Moderating Effects of Entrepreneurial Orientation on Market Orientation-Performance Linkage: Evidence from Chinese Small Firms", *Journal of Small Business Management*, Vol. 46 No. 1, pp. 113-133.

Narver, J. and Slater, S. (1990), "The effect of a market orientation on business profitability" *Journal of Marketing*, Vol. 54 No.4, pp. 20–35.

Noble, C.H., Sinha, R.K. and Kumar, A. (2002), "Market Orientation and Alternative Strategic Orientations: A Longitudinal Assessment of Performance Implications", *Journal of Marketing*, Vol. 66 No. 4, pp. 25-39.

March, J. (1991), "Exploration and exploitation in organizational learning", *Organization Science*, Vol. 2 No. 1, pp. 71-87.

Miles, R.E. and Snow, C.C. (1978), *Organizational strategy, structure and process*, McGraw-Hill, New York, NY.

Pearson, G.J. (1993), "Business Orientation: Cliché or Substance?", *Journal of Marketing Management*, Vol. 9 No. 3, pp. 233-243.

Podsakoff, P.M. and Organ, D.W. (1986), "Self-Reports in Organizational Research: Problems and Prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544.

Rönkkö, M., Eloranta, E., Mustaniemi, H., Mutanen, O.P. and Kontio, J. (2007), *Finnish Software Product Business: Results of the National Software Industry Survey 2007*, Helsinki University of Technology report available at http://www.swbusiness.fi/portal/software_ business_channel/software_product_industry_ survey/ (accessed 15.1.2009) ISBN 978-951-22-9040-6

Schindehutte, M., Morris, M.H. and Kocak, A. (2008), "Understanding Market-Driving Behavior: The Role of Entrepreneurship", *Journal of Small Business Management*, Vol. 46 No. 1, pp. 4-26.

Shoham, A., Rose, G. and Kropp, F. (2005), "Market orientation and performance: a meta-analysis", *Marketing Intelligence and Planning*, Vol. 23 No. 4/5, pp. 435–454.

Slater S.F. and Narver J.C. (1995), "Market orientation and the learning organization", *Journal of Marketing*, Vol. 59 No. 3, pp. 63–74.

Slater S.F. and Narver J.C. (2000), "The Positive Effect of a Market Orientation on Business Profitability: A Balanced Replication", *Journal of Business Research*, Vol. 48 No. 1, pp. 69-73.

Tabachnick, B. G. and Fidell, L.S. (Ed.) (2007), Using *Multivariate Statistics.* Pearson, Boston.

Venkatraman, N. (1989), "Strategic orientation of business enterprises: The construct, dimensionality, and measurement", *Management Science*, Vol. 35 No. 8, pp. 942–962

Voss, G.B. and Voss, Z.G. (2000), "Strategic Orientation and Firm Performance in an Artistic Environment", *Journal of Marketing*, Vol. 64 No. 1, pp. 67-83.

Wang, C.L. (2008), "Entrepreneurial Orientation, Learning Orientation, and Firm Performance", *Entrepreneurship: Theory & Practice*, Vol. 32 No.4, pp. 635-657.

Werner, S., Praxedes, M. and Kim, H. G. (2009), "The reporting of nonresponse analyses in survey research", *Organizational Research Methods,* Vol. 10 No. 2, pp. 287-295.

Wiklund, J. (1999), "The sustainability of the Entrepreneurial Orientation – Performance relationship", *Entrepreneurship Theory and Practice*, Vol. 24 No. 1, pp. 37–48.

Wiklund, J. and Shepherd, D. (2005), "Entrepreneurial orientation and small business performance: a configurational approach", *Journal of Business Venturing*, Vol. 20 No. 1, pp. 71–91.

Wolff, J.A. and Pett, T.L. (2006), "Small-Firm Performance-Modeling the Role of Product and Process Improvements", *Journal of Small Business Management*, Vol. 44 No. 6, pp. 268–284.

Wyer, P., Mason, J. and Theodorakopoulos, N. (2000), "Small business development and the learning organization" *International Journal of Entrepreneurial Behaviour & Research*, Vol. 6 No. 4, pp. 239-259.

Zhou, K.Z., Yim.C.K.B. and Tse, D.K. (2005), "The Effects of Strategic Orientations on Technology- and Market-Based Breakthrough Innovations" *Journal of Marketing*, Vol. 69 No. 2, pp. 42-60.

## Acknowledgements

This paper emerged from the research project System I. The financial support of the Finnish Funding Agency for Technology and Innovation (TEKES) and the companies involved in this project is gratefully acknowledged. The authors would also like to thank the editor and two anonymous reviewers for their helpful comments and suggestions.

**Appendix A.** Means, standard deviations (SD) of the measurement items

| Constructs and items (all measured on 5-point Likert-scales) | Mean | SD |
|---|---|---|
| **Customer orientation** | | |
| We emphasise the meaning of customer satisfaction | 4.51 | .61 |
| We emphasise the meaning of understanding the needs of our customers | 4.57 | .63 |
| We measure customer satisfaction on a regular basis | 3.01 | 1.22 |
| We focus on the level of our customer service | 3.96 | .88 |
| Our customers are very committed | 3.98 | .83 |
| **Technology/product orientation** | | |
| Our products include high technology items | 3.18 | 1.19 |
| We are very active in developing new technologies | 3.11 | 1.17 |
| We intend to develop new technologies in order to respond to the changing expectations of our customers | 3.60 | 1.18 |
| We have better technological knowledge than our competitors | 3.47 | 1.09 |
| Our product development programs are more ambitious than our competitors' are | 3.14 | 1.07 |
| **Entrepreneurial orientation** | | |
| *Innovativeness* | | |
| We emphasise R&D, technological leadership and innovativeness instead of trusting only those products and services, which we have traditionally found good | 3.70 | 1.02 |
| Within the last five years, we have brought several new products or services to the market | 3.41 | 1.18 |
| Within the last five years, the changes in our product lines have been dramatic | 2.94 | 1.18 |
| Innovation is appreciated above all else | 3.04 | 1.01 |
| *Risk-taking* | | |
| In our company, many people want to take risks | 2.99 | .97 |
| We think that bold and wide-ranging acts are needed to achieve our goals | 3.26 | 1.04 |
| We emphasise risk-taking instead of being careful | 2.77 | .92 |
| We emphasise risk-taking | 3.06 | .90 |
| *Proactiveness* | | |
| We intend to get into markets before our competitors | 3.53 | .99 |
| We do things which our competitors then respond to | 3.27 | 1.08 |
| In our company people want to be first in the markets | 3.23 | 1.01 |
| We are typically ahead of the competition in presenting new products or procedures | 3.30 | 1.16 |
| **Learning** | | |
| Our employees are encouraged to learn from their experiences | 4.18 | .756 |
| Our employees are encouraged to share information actively | 4.33 | .767 |
| Management and staff are encouraged to share thoughts, goals and ideas | 4.08 | .810 |
| We value trying new ideas so much that we tolerate a few failures | 4.01 | .924 |
| **Performance** | | |
| Owners are satisfied with the company performance | 3.40 | 1.03 |
| Our company is very profitable in comparison to our competitors | 3.28 | 1.08 |
| Our company is growing very rapidly in comparison to our competitors | 2.95 | 1.20 |

# ARTICLE 3

# The interplay between orientations: Entrepreneurial, technology and customer orientations in software companies

Henri Hakala – Marko Kohtamäki

**Abstract**

This study examines the interplay between entrepreneurial, technology and customer orientations and company performance using data from 164 software companies. To conduct the analysis, the study applies PLS (partial least squares) modelling to understand the direct and indirect effects of entrepreneurial, customer and technology orientations on the performance of a software company. The results indicate that entrepreneurial and customer orientations directly affect performance, but, in this context, they do not support the view that a technology orientation directly enhances performance. More importantly, results suggest that an entrepreneurial orientation positively affects both customer and technology orientations. It appears that software companies need a capability to serve customers well, but also need to recognise new business opportunities from within their current customer relationships. The results suggest that to achieve high levels of performance, software companies need to balance the elements of entrepreneurial proactiveness and innovation with customer needs.

**Keywords:** Customer orientation, entrepreneurial orientation, technology orientation, company performance, software industry

---

# 1 Introduction

In dynamic business environments, such as the software industry (Rönkkö *et al*. 2008), companies need to continuously change and adapt to various environmental conditions to remain viable and attain satisfactory performance levels. Instead of governing the behaviours of its individual actors through formal planning processes or hierarchical procedures, firms rely more on their company culture and strategic direction to guide actions (Eisenhardt & Sull, 2001; Ouchi, 1980). To study this, an increasing number of researchers are investigating the antecedents and effects of the various strategic orientations. Strategic orientations are the principles that direct and influence the activities of the firm and generate the behaviours that are demanded to ensure the viability and performance of the firm (Gatignon & Xuereb, 1997). The orientation represents the elements of the organization's culture that steer its interaction with its environment (Noble *et al*. 2002), thus creating behaviours aimed at satisfying external stakeholder demands and expectations.

Different streams of literature have established and developed measures for the orientation of the business from their own particular perspectives. From the existing literature, entrepreneurial, technology and customer orientations emerge as particularly important to business performance (e.g. Wiklund, 1999; Gatignon and Xuereb, 1997; Cano *et al*., 2004). Within the entrepreneurship literature, the concept of entrepreneurial orientation, which refers to organizations' proactive, innovative and risk-taking behaviour (Covin & Slevin, 1989) has been extensively studied and linked to company performance (Lumpkin and Dess, 1996; Wiklund, 1999; Wiklund and Shepherd, 2005). Many of the companies operating in the software industry are small and entrepreneur-led, and may therefore be expected to operate in this manner. In contrast, the views found within the marketing literature suggest that customer orientation is positively linked to company performance (e.g. Cano *et al*., 2004) and affects performance through its influence on innovativeness, customer loyalty and quality (Kirca *et al*., 2005). The assumption is that through understanding what their customers want and ensuring those customers remain satisfied, software companies will flourish. Yet another perspective for creating performance in the fast-paced software industry is provided by the technology orientation literature. It suggests that implementing new ideas, developing new products or processes and making investments in technology will deliver long-term success (Gatignon and Xuereb, 1997; Hult *et al*., 2004).

Studies suggest that no single strategic orientation alone is sufficient to generate superior performance (Atuahene-Gima and Ko, 2001; Baker and Sinkula, 1999; Bhuian *et al*., 2005). Grinstein (2008) encourages the study of the combinations of different strategic orientations and suggests that companies that are able to utilise and balance several orientations, generate more complex company cultures, which in turn better safeguard viability and performance (Grinstein, 2008). There are differing views on the correct combination of orientations (compare Atuahene-Gima and Ko, 2001 and Bhuian *et al*., 2005) and suggestions that the effect of orientations may be contingent upon environmental variables (Gao, *et al*., 2007). For this reason, we decided delimit this study within a single industry and also controlled for the perceived environmental uncertainty within the industry. Empirically, the study is based on a representative sample of 164 Finnish software businesses. This particular industry was deemed appropriate because of its dynamic nature. The fast pace of change suggests that software companies need to adapt quickly, and so are more likely to utilise orientations, rather than rely on less flexible control or planning mechanisms (Eisenhardt & Sull, 2001).

The customer, technology and entrepreneurial orientations are rarely investigated simultaneously and only a limited number of studies analyze the relationship between them (Li, *et al*., 2008; Grinstein, 2008). The majority of previous studies have investigated the relationship between only two of the orientations (e.g. Atuahene-Gima and Ko, 2001; Berthon *et al*., 1999; Bhuian *et al*., 2005; Jeong *et al* . 2006). In contrast, Zheng *et al*. (2005) focus on the different effects of market, technology, entrepreneurial and learning orientations on innovations, rather than the relationships between the orientations. Salavou (2005) suggests that learning orientation should be complemented by customer and technology orientations, yet the study investigates the impact of orientations on the extent to which a product is new and unique. Our search of the literature revealed only one prior study (Kaya and Seyrek, 2005) investigating the impact of customer, technology and entrepreneurial orientation on performance. The Kaya and Seyrek (2005) study simply suggests that one orientation is more suitable than another in different market conditions, while the important premise of our study is that these orientations complement each other and together create the strategic orientation of the firm.

This study contributes to an emerging stream of literature investigating situations in which several orientations may not only co-exist but also complement each other. Consequently, this stream of research asks how the interplay between entrepreneurial, customer and technology orientations affects company performance in the software industry. We suggest that entrepreneurial orientation affects the

levels of customer and technology orientation, and thus, the three co-exist with and complement each other within the strategic posture of the firm.

The article aims to make the following contributions to existing knowledge. Firstly, the study provides empirical evidence for the combined and simultaneous effects of customer, entrepreneurial and technology orientations on company performance. Secondly, the study investigates the relationship of entrepreneurial orientation to the levels of both customer and technology orientation – an effect largely neglected in prior studies. Thirdly, the study exposes implications for entrepreneurs and managers in the software industry aiming to develop an appropriate mix of orientations to guide the direction of their enterprises.

Following this introduction, the second section reviews the relevant literature on entrepreneurial, technology and customer orientations, and derives six hypotheses for the empirical research. Section three presents the methodology of the study, while the fourth section proceeds with the results of the empirical study with data from 164 software companies by using structural equation modelling with Smart PLS (Ringle *et al*., 2005). The final discussion section highlights the implications for managerial practice, further research and the limitations of the study.

# 2 Theory development and hypotheses

*Strategic Orientations*

Strategic orientation represents the strategy the firm implements to achieve and maintain performance. The orientation of the company activates and steers the behaviours of the actors within the firm ensuring continuous performance (Gatignon and Xuereb, 1997). Research on strategic orientations consists of various concepts and approaches. Venkatraman (1989), one of the earliest developers of the theory of strategic orientations, created a construct for the strategic orientation of the business. The construct attempts to capture the strategy concept through its six dimensions of aggressiveness, analysis, defensiveness, futurity, proactiveness and riskiness. However, the orientation of the business has also attracted wide interest among other scholars of entrepreneurship, management and marketing, investigating the principles that direct and influence the activities of the firm from their own perspectives (Atuahene-Gima and Ko, 2001; Bhuian *et al*., 2005; Cano *et al*., 2004; Covin and Slevin, 1989; Grinstein, 2008; Kirca *et al*., 2005; Wiklund, 1999; Wiklund & Shepherd, 2005). This section introduces three common approaches to the construct of strategic orientation, namely technology, customer and entrepreneurial orientation. These particular orientations are chosen for inves-

tigation in order to capture the more holistic view of the strategic orientation of the business than any single one of them could provide on its own. We build on a similar holistic idea to Venkatraman (1989), proposing that a focus on one area of the business such as customers, does not truly reflect the orientation of the business. While numerous other dimensions such as human resources, competitors or production could also be considered, researchers opted for these three established orientation constructs because of their widespread success and prior research evidence on their performance effects. Furthermore, prior studies point out that the customer and technology orientations might complement each other (Jeong *et al* . 2006) and that combining customer and entrepreneurial orientation benefits company performance. (Atuahene-Gima & Ko, 2001, Bhuian et. al., 2005; Li *et al*., 2008). In order to investigate the links between these three different approaches, researchers decided to utilise measurement scales adapted from prior studies, rather than build a new all-encompassing measurement scale. The following section presents the strategic orientation applied in this study.

*Entrepreneurial orientation*

Entrepreneurial orientation is studied extensively within the entrepreneurship literature (Bhuian *et al*., 2005; Covin and Slevin, 1989; Hult *et al*., 2004; Wiklund, 1999; Wiklund and Shepherd, 2005). Entrepreneurial orientation is a strategic orientation that captures specific entrepreneurial dimensions of a firm's strategic orientation (Wiklund and Shepherd, 2005) namely risk taking, proactivity and innovativeness (Covin and Slevin, 1989; Wiklund, 1999; Wiklund and Shepherd, 2005; Bhuian *et al*., 2005). Past research suggests that entrepreneurial orientation positively affects performance (e.g. Hult *et al*., 2004; Wiklund, 1999; Wiklund and Shepherd, 2005). The performance effect is based on the idea that an organization that takes risks, is proactive and innovative is better able to adjust its operations in a dynamic competitive environment (Covin & Slevin, 1989). Slater and Narver (2000) suggest that entrepreneurial orientation affects both new product and market development. The dimensions of entrepreneurial orientation facilitate risk taking associated with new technology development and proactive, innovative development of new products (Avlonitis and Salavou, 2007; Lumpkin and Dess, 1996, Wiklund and Shepherd, 2005). Previous studies have established the link between entrepreneurial and customer orientation (Slater & Narver, 1995; 2000) and also suggested that firms may perform better if they combine the two (Atuahene-Gima & Ko, 2001, Bhuian et. al., 2005; Li *et al*., 2008) owing to the pursuit of a proactive understanding of customer needs (Narver *et al*. 2004).

*Customer orientation*

Market orientation has long been one of the cornerstone constructs in marketing literature and has even been viewed as an organizational prerequisite of superior performance (Deshpandé *et al*., 1993; Kohli and Jaworski, 1990; Narver and Slater, 1990; Slater and Narver, 1995; 2000). The popular conceptualization (Narver and Slater 1990; Slater and Narver, 1995) splits market orientation into elements of customer and competitor orientation, and finds examples of inter-functional coordination in the utilisation of the market information. Despite its high status with many marketing scholars, the market orientation concept has also been strongly criticised and its relevance continues to be the subject of debate (see discussions e.g. Henderson, 1998; Jones, 2004). Therefore this study opted to focus on the concept of customer orientation that captures the ability of the company to understand its customers' needs and create value for its target buyers (Narver and Slater, 1990). The link between customer orientation and firm performance has been established in prior research and recent meta-analyses (e.g. Cano *et al*., 2004; Kirca *et al*., 2005). Yet, prior study has suggested that customer orientation alone is not enough for software companies, but sustainable performance also requires a technological resource base actively developing new products (Giarratana and Fosfuri, 2007).

*Technology orientation*

The concept of technology orientation refers to a firm's desire to utilise and develop new technologies or products (Gatignon and Xuereb, 1997). It suggests that customer value is best created and the long-term success of the firm best ensured through new innovations, technological solutions, products, services and/or production processes (Gatignon and Xuereb 1997; Grinstein 2008; Hamel and Prahalad 1991). Studies have found evidence of positive performance effects (e.g. Day, 1999; Gatignon and Xuereb 1997), yet some studies have also found detrimental effects. (Gao *et al.* 2007). A technology focus may generate unrecoverable costs, however, the rapid pace of change in the software industry soon makes the products obsolete, and investment in technology may be needed simply to keep up with the competition. Focus on new technologies, rather than the development of products on the basis of current customer needs, is seen as securing the viability of firms in times of disruptive changes in their markets (Christensen and Bower 1996). It complements customer orientation in the sense that a technology oriented firm attempts to meet the needs of customers through the technological solutions it devises. In addition, technology may also be used to differentiate

product offerings or to generate cost advantages in production (Gatignon and Xuereb, 1997).

### *The interplay of strategic orientations*

These particular concepts have been chosen for investigation because they can be seen to cover some of the main elements of a successful strategy in software companies. Understanding customers and positioning the product offerings in the marketplace to meet the customer demands is likely to be important for any company, while the dynamic nature of the software industry also demands investment in technology. Traditionally, a focus on customers and a focus on technology are alternatives at the opposite ends of a spectrum, yet this study considers the possibility that entrepreneurial orientation links them. Entrepreneurial behaviour is commonly believed to change an organization's relationship with the environment by reallocating resources through product and market development (e.g. Slater and Narver, 2000). Our assertion is that entrepreneurial orientation enables companies to balance the demands of current customers and new technology development. Other researchers have also suggested that, generally, balancing several orientations ensures better performance and makes companies more viable moving forward (Atuahene-Gima and Ko, 2001; Bhuian *et al*., 2005; Grinstein, 2008) and these are the reasons that these three orientations feature in this study.

### *Derivation of hypotheses*

Past research (e.g. Cano *et al*., 2004; Wiklund and Shepherd, 2005; Voss and Voss, 2000) on customer, entrepreneurial and technology orientations suggests that each orientation has a positive effect on performance. Therefore we have formulated three hypotheses to determine how each of the orientations – entrepreneurial, technology and customer – directly affects software company performance.

The positive effect observable between customer orientation and firm performance has been established since the 1990s. (Jaworski and Kohli, 1993; Narver and Slater, 1990). The relationship is also confirmed in small and medium-sized enterprises (Pelham, 2000), and the recent meta-analyses further verify the positive link in various environmental conditions (Cano *et al*., 2004; Shoham *et al*., 2005). Customer orientation affects company performance by increasing the customer's commitment and loyalty and, furthermore, the company's innovativeness and quality (Kirca *et al*., 2005). The basic hypothesis is thus;

> *$H_{1a}$: The greater the extent of customer orientation, the higher the level of software company performance*

A number of studies point out that entrepreneurial orientation positively affects firm performance (e.g. Wiklund, 1999; Wiklund and Shepherd, 2005). Firm owners adopting an entrepreneurial orientation, achieve competitive advantages (Covin and Slevin, 1989; Miller, 1983). However, some researchers point out that the relationship between entrepreneurial orientation and performance can sometimes be indirect (Smart and Conant, 1994, Hart, 1992 in Wiklund and Shepherd 2005) and that entrepreneurial orientation may predict performance only in younger firms (Runyan *et al*., 2008). Despite the possible factors mediating or moderating the relationship between entrepreneurial orientation and performance (Wiklund and Shepherd, 2005), and the fact that studies have not found such relationships (e.g. Slater and Narver, 2000), some studies argue for the existence of a direct relationship (Runyan *et al*., 2008). Thus;

> $H_{1b}$: *The greater the extent of entrepreneurial orientation, the higher the level of software company performance*

Technology orientation is also said to contribute to company performance (Damanpour, 1991; Gatignon and Xuereb, 1997; Hult *et al*., 2004). In this respect, technological innovation needs to be separated from entrepreneurial innovativeness, which is an antecedent of technological innovation. Entrepreneurial innovativeness contributes to a company's ability to recognise and utilise new business opportunities, while companies with a technological orientation rely on new technology as a source of new product innovation. Firms aiming for product innovation superior to that of their competitors should have a strong technological capability, and technology orientation is recommended for firms in a number of environments (Gatignon and Xuereb, 1997). A recent study has described the software industry as a technology-based 'Schumpeterian' environment in which technological competence (along with product strategies, market orientation and learning), plays a central role (Giarratana and Fosfuri, 2007) thus;

> *$H_{1c}$: The greater the extent of technology orientation, the higher the level of software company performance*

The case studies by Schindehutte et al. (2008) suggests that the entrepreneurial orientation of the firm determines how other strategic orientations are manifested, if they are at all. Past research has suggested that entrepreneurial behaviours generate product innovations and technological orientation (Atuahene-Gima and Ko, 2001, Gatignon and Xuereb, 1997) but also facilitate better understanding and learning from customers. (Atuahene-Gima and Ko, 2001; Baker and Sinkula,

1999; Bhuian et al., 2005; Li et al., 2008). Also Slater and Narver (2000) suggest that entrepreneurial orientation operates through product or market development. Adopting an entrepreneurial orientation may provide a means to reconcile the other strategic orientations (Aloulou & Fayolle, 2005).

While it could be argued that technology oriented firms are forced to act entrepreneurially in order to make their technology investments commercially viable, a number of factors suggest that entrepreneurial orientation affects the level of technology orientation rather than vice versa. The proactivity dimension of entrepreneurial orientation implies that entrepreneurs anticipate the future needs of the marketplace and take action to meet them (Lumpkin and Dess, 1996). Entrepreneurial orientation may be linked with an aggressive technological posture (Gibbons and O'Connor, 2003), and investing in the latest technologies appears to be a logical approach to adopt in any attempt to create first-mover advantages. Previous research has also found that active entrepreneurs (scoring high on proactiveness and risk taking) differ significantly in terms of creating more unique products (Avlonitis and Salavou, 2007) thus indicating a higher level of technology orientation. The innovativeness dimension of the entrepreneurial orientation also supports the development and creation of new technologies while entrepreneurial risk taking enables investments in new technology where the return on investment is uncertain or the cost of failure high (Miller and Friesen, 1982; Wiklund and Shepherd, 2005). This chain of arguments proposes that the elements of entrepreneurial orientation may lead firms to take risks, be proactive and innovate with products and technologies, and thus;

> $H_{2a}$: *The greater the extent of entrepreneurial orientation, the higher the level of technology orientation*

The dimensions of entrepreneurial orientation may also point toward efforts to understand customers better (Atuahene-Gima and Ko, 2001; Baker and Sinkula, 1999; Bhuian *et al*., 2005; Li *et al*., 2008). The argument for the relationship between entrepreneurial orientation and customer orientation is twofold. Firstly, being proactive can lead entrepreneurs to search out new customer needs, as they have a tendency to seek new business opportunities, which can also be found from within the present customer relationships (Li *et al*., 2008). Secondly, risk-taking entrepreneurial companies tend to have an inclination to invest, not only in customer acquisition, but also in current customer relationships. Entrepreneurial firms often develop new business by using their current resource base; then entrepreneurial orientation can lead to an increase in customer orientation. Thus;

> $H_{2b}$: *The greater the extent of entrepreneurial orientation, the higher the level of customer orientation*

Previous studies suggest that customer orientation supports technological development and innovation (Kohli and Jaworski, 1990; Slater and Narver, 1995). Active interaction with the customer helps the company to understand customer needs and thus to develop technology that fits the needs of the customers. Some have also argued that customer orientation can increase the creativity of a company (Bennett and Cooper, 1981; Christensen, 1997), which again can contribute to technological innovation. Versioning new products or broadening the product portfolio are found to be important in explaining survival rates in the software industry (Giarratana and Fosfuri, 2007). A broad product scope enables firms to better serve the diverse needs of customers, while versioning typically signals "continual and quick responses to suggestions and criticism from the customer" (Giarratana and Fosfuri, 2007 p. 913). While understanding the needs of high-technology customers may be difficult, advanced methods to involve customers in product development may be employed (Von Hippel and Katz 2002). Therefore we suggest that true customer orientation may support product and technological development. Thus;

> $H_{2c}$: *The greater the extent of customer orientation, the higher the level of technology orientation*

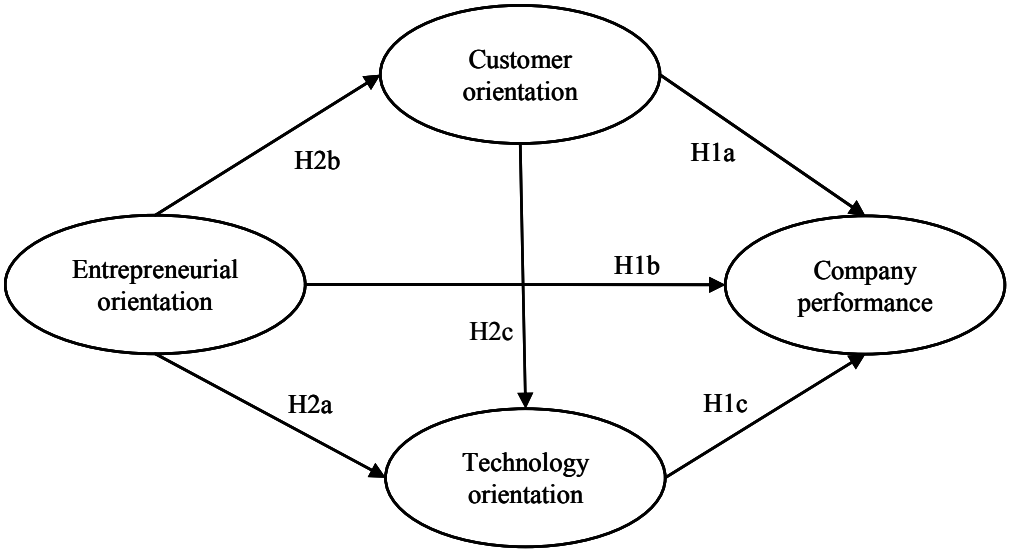



**Figure 1.** Research model.

# 3 Data, method and measures

*Data collection and respondents*

The present study analyzes strategic orientations and their effect on company performance in the Finnish software industry. The software industry in Finland is known for its relative dynamism in comparison to the country's more stable industries (Rönkkö *et al*. 2008). It is characterised by growth, an emphasis on product and service development and attempts to internationalize (Rönkkö *et al*. 2008). The data was collected by a questionnaire sent to all Finnish software companies with over five employees (n = 1283), according to information drawn from the Business Register maintained by Statistics Finland (identified on its database by the code 72). Following reminder letters, and discounting incomplete responses the survey produced a usable sample of 164 responses, a response rate of 13%. Due the low response rate, researchers tested for nonresponse bias by comparing the first third of respondents to the last third on the key study variables and available demographic variables (Armstrong & Overton, 1977; Werner *et al*. 2007). Because the groups did not differ statistically significantly, we concluded that the data is sufficiently free from nonresponse bias.

The respondents are managing directors, of whom 77% are also founders of the company, while 23% joined the company at later stage. Most respondents are highly educated, with 67% of the respondents holding an academic degree and only 6% reporting no further education. The average annual turnover of the companies was 2.9m EUR. Of the companies, 64% have their own software products, 53% are a consulting and training business, while 67% of the companies provide various maintenance or user support services. On average the respondent firms have around 500 customers each, but their single largest customer typically provides 26% of their total revenue. Hence, many of these companies are somewhat dependent on their most important customer. The data was gathered in September 2008, and thus captures a snapshot of the software industry working in a relatively positive economic climate. Statistics Finland (2009) reports a growth in turnover of 9.1% for the Finnish software sector during 2008.

*Methods and measures*

The data was analyzed by using a PLS (partial least squares) approach and SmartPLS M3 software (Ringle *et al.* 2005). PLS allows simultaneous investigation of both reflective and formative constructs as were applied in this study. The study applies measurement items adapted and tested in previous studies, as re-

ported in appendix A. The research model consists of three reflective constructs – customer orientation, technology orientation and performance – and one formative construct – entrepreneurial orientation. The present study measures items on a five-point Likert-scale (1=fully disagree, 5=fully agree). The unit of analysis is the organization and all variables reflect the respondent's perceptions rather than indisputable facts, although perceptions arguably provide the most precise assessment of conditions within a firm (Lyon *et al*., 2000)

To measure entrepreneurial orientation, 12 well-established and tested items were adapted from previous literature (appendix A). The items are based both on Covin and Slevin (1989) and Wiklund (1999) and measure entrepreneurial proactivity, innovativeness and risk taking. Following the theory of entrepreneurial orientation, and the criterion proposed by Jarvis, MacKenzie and Podsakoff (2003), the dimensions are considered as causes rather than effects of the entrepreneurial orientation, and thus used within PLS as formative indicators of the entrepreneurial orientation construct (Diamantopoulos and Siguaw, 2006).

Customer orientation is considered reflective, because the items develop a consistent construct. The items are in line with the approach of Narver and Slater (1990) and adapted from Li *et al*. (2008), who also tested scales. Items measure the company's emphasis on customer satisfaction, the company's emphasis on understanding customer needs, and the levels of customer satisfaction, customer service and customer commitment. The study focused on the customer orientation component because the other commonly applied dimensions (competitor orientation and inter-functional coordination) of the market orientation construct (Narver and Slater 1990), would have overlapped to a considerable degree with the other study constructs, and arguably are also dimensions inappropriate for smaller businesses (Jones *et al*., 2003). Instead of coordination we propose that the entrepreneurial behaviour patterns are utilised to distribute the customer knowledge across the organization.

The items for technology orientation were adapted from Derozier (2003). Items measure the level of technology in the company's products (compare e.g. Gatignon and Xuereb, 1997; Van de Ven, 1986), its activity in developing new technologies (compare e.g. Gatignon and Xuereb, 1997), its urge to develop new technological solutions to respond to customer needs, its level of technological know-how in comparison to its competitors, and the ambition of its product development programs.

The measures for company performance are adapted from previous studies (Gibson and Birkinshaw, 2004; Wolff and Pett, 2006) and reflect the perception of the respondent rather than financial facts. The financial performance is measured by

benchmarking the respondents' firms' business performance against competitors based on profitability, growth and owners' overall satisfaction with the company performance.

As control variables in this study, we used environmental uncertainty and company size. The environmental uncertainty scale is adapted from the work of Jokipii (2006) and measured by three variables capturing the rapidity of the change in customer preferences, the perceived need for constant product and service revisions and the level of customization found in the company's products and services. The effect of environmental uncertainty is interesting because of its potential effect on company performance. Uncertainty in the business environment requires companies to adapt rapidly. Strategic orientations represent different ways to adapt (Vesalainen, 1995) and thus their performance effects may vary depending on the environmental uncertainty (Zahra and Covin, 1995; Lumpkin and Dess, 2001). Company size is measured by a company's turnover from the previous year (2007). Firm size is commonly used as a control variable in entrepreneurship research (Murphy *et al*, 1996), and there was an expectation that the strategic processes of interest in this study might vary systematically with the size of the firm (see, for example, Mintzberg, 1979). For example entrepreneurial orientation may be more typical of smaller companies, which represent the majority of the Finnish software sector (Rönkkö *et al*. 2008).

# 4 Data analysis and results

*Assessment of the measurement models*

The study tests the reliability of the reflective constructs by using a Cronbach's alpha value, composite reliability and average variance extracted (AVE). All the main reflective study constructs achieve satisfactory values (see appendix 1), exceeding the typical requirements for Cronbach's alpha (.7), composite reliability (.7), and AVE (.5) (Chin, 1998; Cool *et al*., 1989). Only the alpha value of environmental uncertainty was a little below the threshold (.64), but as it achieves highly satisfactory AVE and composite reliability values, we concluded that it can be used as a control variable in the analysis. In addition, the item loadings show satisfactory values (Chin 1998).

Following the theory of entrepreneurial orientation, and the criterion proposed by Jarvis *et al.* (2003) entrepreneurial orientation is measured as a formative construct and thus requires a slightly different approach to assessing reliability and validity. The Cronbach's alpha value for each dimension of entrepreneurial orien-

tation exceeded the typical threshold value (.7), being .86 for proactiveness, .91 for risk taking, and .75 for innovativeness. Because the construct is measured as a formative one, the path coefficients show which dimensions contribute to the relationship between the entrepreneurial orientation and other variables of the study (Diamantopoulos and Siguaw, 2006). Innovativeness and proactiveness seem to have statistically significant effects, while risk taking does not (appendix A). According to the guidelines of Diamantopoulos and Winklhofer (2001), formative measures have to be tested for multicollinearity. Both of the tests, the correlation matrix and *vif-index* show that the construct is free of multicollinearity, as the highest correlation between the dimensions is .64 (the threshold is < .9) and the *vif-index* is well below 2 (the threshold is < 10) (Tabachnick and Fidell, 2007).

We also tested the multicollinearity between the constructs. The *vif-index* between constructs was found to be below 2.1 while table 1 shows that the highest correlation between the independent variables is .70. Both observations suggest that despite the independent variables' moderate correlation, the data is free of multicollinearity (Tabachnick and Fidell, 2007). Table 1 also supports construct level discriminant validity as the AVE values exceed the squared latent variable correlations (Chin, 1998). The item level discriminant validity was also tested. All items load highest on their respective construct with high (>.6) and statistically significant item loadings, suggesting item level discriminant validity (Chin, 1998, Hulland, 1999).

| | Company size | Environmental uncertainty | Entrepreneurial orientation | Customer orientation | Technology orientation |
|---|---|---|---|---|---|
| 1. Company size | - | | | | |
| 2. Environmental uncertainty | -.07 | **.57** | | | |
| 3. Entrepreneurial orientation | -.18* | .21** | - | | |
| 4. Customer orientation | .09 | .13 | .29** | **.54** | |
| 5. Technology orientation | -.20* | .18* | .70** | .25** | **.65** |
| 6. Performance | .03 | .18* | .29** | .41** | .21** |

**. Correlation is significant at the 0,01 level (2-tailed)

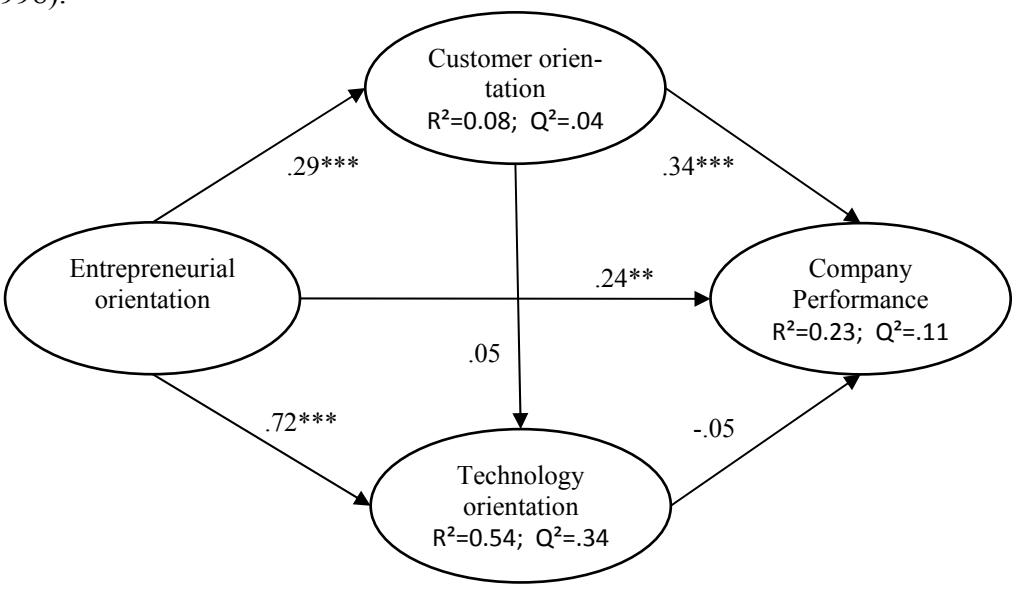
***Table 1.*** *Squared latent variable correlations (off-diagonal elements) versus AVE (bold diagonal elements).*

Harman's (1976) one-factor test was used to assess the common method variance of the constructs. Following the suggestion of Podsakoff *et al*. (2003), principal axis factoring was applied. Common method variance suggests that in a study

using multiple constructs, the items should load on multiple factors and a first factor should not account for most of the covariance (Podsakoff and Organ, 1986). In this study, we found eight factors with *eigenvalues* greater than 1 (KMO = 0.86). Eight factors explained 71 % of the variance, while the first factor accounted for 29 % of the variance. Hence, common method variance does not appear to be present in the data. Overall, the evaluation of the measurement models reveals that all items and constructs are of satisfactory reliability and validity for the purposes of this analysis.

*The structural model*

The present study estimates the structural model by utilising the path-weighting scheme, an iterative estimation process, which considers the directions of the causal relationships between dependent and independent variables (Chin, 1998). The study applies a standard bootstrapping procedure (Yung, and Bentler, 1996). Figure 2 presents the results of the structural model. As the figure shows, PLS analysis results in a high explanatory power of entrepreneurial, technology and customer orientation. The $R^2$ value for performance is .23, for customer orientation .08, and for technology orientation .54. The $Q^2$ value associated with the Stone-Geisser-Criterion is higher than zero for all the dependent variables, which indicates that the model fulfills the prerequisites of predictive relevance (Chin, 1998).




Path coefficients reported. † $p \leq 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (based on one-sided t-test with 500 df).

***Figure 2.*** *Results of the partial least square analysis - path coefficients and significance.*

An analysis of the path coefficients shows that the relationship between customer orientation and company performance (.34, $p < 0.001$) is strong and statistically significant. Results also indicate that entrepreneurial orientation (.24, $p < 0.05$) explains company performance and the relationship is also statistically significant. In contrast, the relationship between technology orientation (-.05, n.s.) and company performance is negative, but also statistically non-significant. Entrepreneurial orientation seems to have a statistically significant relationship to technology orientation (.72, $p < 0.001$), and to customer orientation (.29, $p < 0.001$), while the relationship between customer and technology orientation is statistically non-significant (.05, n.s.). The path coefficients show that customer and entrepreneurial orientation have a direct effect on company performance, while technology orientation has no direct effect. Entrepreneurial orientation seems to influence both technology and customer orientations. However, customer orientation does not explain technology orientation. We also tested the mediation effects, and found the impact of entrepreneurial orientation on company performance to be partially mediated by customer orientation since the direct effect of entrepreneurial orientation weakens from .35 ($p < 0.001$) to .21 ($p < 0.01$) when customer orientation is entered in the model. The mediating effect of technology orientation was also tested for, but not found (Baron & Kenny, 1986). The model shows satisfactory goodness of fit (.42) (Tenenhaus *et al*., 2005). The control variables suggest that company size has no statistically significant effect (.04, n.s.) while environmental uncertainty has a small effect (.12, $p < 0.10$) on company performance.

The results of the structural model suggest that both customer and entrepreneurial orientation have an effect on software company performance. Hence, the analysis shows support for hypothesis H1a and H1b. However, the tests show no support for hypothesis H1c, since technology orientation does not explain company performance. The study also found support for H2a and H2b as entrepreneurial orientation explains both technology and customer orientation. However, customer orientation does not contribute to technology orientation, thus hypothesis H2c is not supported.

# 5 Discussion and implications

The results of this study suggest that software companies need to be both customer and entrepreneurially oriented in order to perform well. It seems that both entrepreneurial and customer orientation directly explain company performance. Since the direct positive effects of customer and entrepreneurial orientations have previously been reported separately in a number of studies (see eg. Cano *et al*.,

2004; Kirca *et al*., 2005, Wiklund, 1999; Wiklund and Shepherd, 2005), our result may at first appear to be merely confirmatory. However, the previous results investigating the effects of customer and entrepreneurial orientation and suggesting that firms should combine the two are rare (Atuahene-Gima & Ko, 2001, Bhuian et. al., 2005; Li *et al*., 2008), implying that our result from the software industry context can contribute to this stream of literature.

The key finding of the study is that entrepreneurial orientation influences both customer and technology orientations. Hence, the impact of entrepreneurial orientation on performance is also indirect and partially mediated (Baron & Kenny 1986) by customer orientation. This is also an important additional explanation for the existence of a link between customer orientation and performance. While firms that are driven by customer needs perform well, the proactive, market-driving behaviours of a truly customer-oriented organization are borne out of an entrepreneurial impetus. It has been suggested that truly customer-oriented companies are also proactive in their customer orientation (Narver *et al*. 2004). While this may be reflected in the measure of entrepreneurial orientation, even the most cautious interpretation of our results would suggest that entrepreneurial orientation is interlinked with customer and technology orientation and is thus, an important element in the performance of a software company.

The second key finding of the study implies that software firms, besides focusing on customers, should concentrate on the proactive and innovative dimensions of entrepreneurial orientation, but avoid taking excessive risks. This result is in line with the recent findings of Li *et al*. (2008) derived from small businesses in China, suggesting that our results may be relevant beyond the context of Finnish software companies. Our interpretation of the result suggests that successful entrepreneurs attempt to control the level of risk taking by being customer oriented – by knowing their customers better through the adoption of customer-oriented behaviour.

Previous studies have shown that it is important for a company to be able to balance several orientations (Atuahene-Gima and Ko, 2001; Christensen and Bower, 1996; Slater and Narver, 1995). This study supports this interpretation, as it seems that both customer and entrepreneurial orientation increase company performance. Hence, companies need to stretch their capabilities to continuously serve their customers, but also seek new business opportunities in order to perform at a high level.

Prior studies suggest that technology orientation, introducing new products and adopting new technologies, is important for the survival of software companies (Giarratana and Fosfuri, 2007). The results of this study neither support the hypothesis that technology orientation would directly explain company performance, nor suggest that technology orientation is unnecessary for software companies. A recent study by Gao *et al*. (2007) found that technology orientation is a good strategic choice only when levels of technological turbulence are high. One of the basic propositions for selecting technology orientation is to shape and lead customer needs and preferences in a situation where customers are unable to contribute towards new product development, as they do not know what it could do for them (Gatignon and Xuereb, 1997; Hamel and Prahalad, 1991; Voss and Voss, 2000). However, further research on the role and the mechanisms of technology orientation in conjuction with other orientations is needed.

*Managerial implications*

The results of this study suggest that software companies need to focus on their customers, but also continuously seek new business opportunities. This suggests that managers of software companies should aim to develop a strategic orientation that seeks to understand the meaning of value for their current customers and go on to create it, but also continuously seeks new business opportunities, and innovatively and proactively explore both current and new market segments. Such an orientation would also create a requirement upon the partners in the customer relationships, not only to increase the ability to serve customers, but also the ability and willingness to explore new business opportunities in the current customer relationships. A well-known international example is Apple Corporation that has demonstrated a capability to apply an understanding of its customers' needs to create user-friendly concepts (West and Mace, 2010). Thus, Apple demonstrates the entrepreneurial capability to innovate and create value in its customer interface. As our results also suggest, technology may not be important *per se*, but may become important when linked with a balanced entrepreneurial capability to create customer value. Maintaining or developing a proactive and innovative exploration of new business opportunities, combined with a focus on current customers, apparently supports software company performance. Overall, these results highlight the importance in the software industry context of simultaneously balancing several strategic orientations, and remind managers of the importance of proactive and innovative behaviour both in terms of technological development and customer demands.

*Limitations and research implications.*

The present study obviously demonstrates the typical limitations of a cross-sectional survey with a limited sample. Longitudinal research settings could test the propositions and potentially find shifting relationships between orientations and with performance developing over time. Secondly, since these results were limited to software businesses in Finland at the top of an economic cycle, further research is needed from other industries, cultures or under different economic conditions. The correct mix of strategic orientations is likely to be related to industry and culture. In addition, the reliance on subjective perceptual performance measures suggests that the results must be interpreted with some caution. Perceptual measures of performance have well-documented disadvantages relating for example to measurement error or potential for common method bias (see e.g. Murphy and Callaway, 2004). Yet, reliable and comparable profitability data would have been difficult, if not impossible, to obtain for the smaller firms in the sample. While the cross-sectional survey method, irrespective of performance measures, only captures a snapshot of the organizational reality, we opted for subjective measures. However, the use of perceptual measures is common, and prior studies imply that the subjective and objective measures are correlated, albeit representing different constructs of performance (e.g. Murphy and Callaway, 2004; Murphy *et al*, 1996, Gupta and Govindarajan, 1984). Yet, despite the difficulties and uncertainties, these results and the discussion that they will provoke, are significant in terms of establishing a basis for further research that considers the simultaneous effects of different strategic orientations in a more qualitative manner. For example, the relationship between technology orientation and company performance remains unclear; the present study encourages in-depth case studies to find the potential variables that could mediate or moderate the relationship between technology orientation and company performance. Furthermore, investigating other complementary constructs and the use of other types of performance measures might reveal further mechanisms at work amongst the mix of strategic orientations.

*Acknowledgements:*

This paper emerged from the research project System I. The financial support of the Finnish Funding Agency for Technology and Innovation (TEKES) and the companies involved in this project is gratefully acknowledged.

# References

Aloulou, W. and Fayolle, A. (2005). A conceptual approach of entrepreneurial orientation within small business context. *Journal of Enterprising Culture*, 13(1): 24-45.

Armstrong, J.S. and Overton, T.S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing*, 14(3): 396–402.

Atuahene-Gima, K. and Ko, A. (2001). An Empirical Investigation of the Effect of Market Orientation and Entrepreneurship Orientation Alignment on Product Innovation. *Organization Science*, 12(1): 54–74.

Avlonitis, G.J. and Salavou, H.E. (2007). Entrepreneurial orientation of SMEs, product innovativeness, and performance. *Journal of Business Research*, 60: 566–575.

Baker, W.E. and Sinkula, J.M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Academy of Marketing Science Journal,* 27: 411–427.

Baron, R.M. and Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, **51**(6): 1173–1182.

Bennett, R.C. and Cooper, R.G. (1981). The misuse of marketing: an American tragedy. *Business Horizons,* 24(6): 51–61.

Berthon, P., Hulbert, J.M., and. Pitt, L.F (1999). To Serve or Create? Strategic orientations toward customers and innovation. *California Management Review*, 42(1):37–58.

Bhuian, S.N., Menguc, B., and Bell, S.J. (2005). Just entrepreneurial enough: the moderating effect of entrepreneurship on the relationship between market orientation and performance. *Journal of Business Research,* 58: 9–17.

Cano, C.R., Carrillat, F.A., and Jaramillo, F. (2004). A meta-analysis of the relationship between market orientation and business performance: evidence from five continents. *International Journal of Research in Marketing,* 21(2): 179–200.

Chin, W.W. (1998). The Partial Least Squares Approach to Structural Equation Modeling in G.A. Marcoulides (eds) *Modern Methods for Business Research,* 295–336. Mahwah: Lawrence Erlbaum.

Christensen, C.M. (1997). *"The innovator"s dilemma"*. Boston: HBS Press.

Christensen, C.M. and Bower, J.L. (1996). Customer Power, Strategic Investment, and the Failure of Leading Firms. *Strategic Management Journal,* 17(3): 197–218.

Cool, K., Dierickx I., and Jemison, D. (1989). Business Strategy, Market Structure and Risk-Return Relationships: A Structural Approach. *Strategic Management Journal,* 10(6): 507–522.

Covin, J.G. and Slevin, D.P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal,* 10: 75–87.

Day, George S. (1999). Misconceptions about Market Orientation. *Journal of Market Focused Management* **4**(1): 5-16.

Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34: 555–590.

Derozier, C. (2003). *Marketing creativity in new product development: The role of market orientation, technology orientation, and interfunctional coordination*. Doctoral dissertation, Texas Tech University, Ann Arbor: Proquest Information and Learning. UMI Number: 3083376.

Deshpandé, R., Farley J.U., and Webster, F.E. Jr., (1993). Corporate Culture, Customer orientation and innovativeness in Japanese Firms: A Quadrad Analysis. *Journal of Marketing,* 57(1): 23–37.

Diamantopoulos, A. and Siguaw, J.A. (2006). Formative versus reflective indicators in organizational measure development. a comparison and empirical illustration. *British Journal of Management,* 17(4): 263–282.

Diamantopoulos, A. and Winklhofer, H.M. (2001). Index Construction with Formative indicators: An alternative to Scale Development. *Journal of Marketing Research,* **38**:269–277.

Eisenhardt, K.M. and Sull, D.N. (2001). Strategy as simple rules. *Harvard Business Review,* 79(1): 106–116.

Gao, G.Y., Zheng, K.Z., and Yim, C.K. (2007). On what should firms focus in transitional economies? A study of the contingent value of strategic orientations in China. *International Journal of Research in Marketing,* 24(1):3–15.

Gatignon, H. and Xuereb, J.M. (1997). Strategic Orientation of the Firm and New Product Performance. *Joumal of Marketing Research,* 34(1): 77–90.

Giarratana M.S. and Fosfuri, A. (2007). Product strategies and survival in Schumpeterian Environments: evidence from the US Security Software Industry. *Organization Studies*, 28(6): 909–929.

Gibbons, P.T. and O`Connor, T. (2003). Strategic posture, technology strategy and performance among small firms. Journal of Enterprising Culture, 11(2): 131–146.

Gibson, C.B. and Birkinshaw, J. (2004). The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity. *Academy of Management Journal,* 47(4): 209–226.

Grinstein, A. (2008). The relationships between market orientation and alternative strategic orientations A meta-analysis. *European Journal of Marketing,* 42(1/2): 115–134.

Gupta, A.K. and Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal* 27(1): 25–41.

Hamel, G. and Prahalad, C.K. (1991). Corporate Imagination and Expeditionary Marketing. *Harvard Business Review,* 69(4): 81–92.

Harman, H.H. (1976). *Modern Factor Analysis*, 3rd edition, Chicago: University of Chicago Press.

Hart, S.L. (1992). An integrative framework for strategy-making processes. *Academy of Management Review,* 17(2): 327–351.

Henderson, S. (1998). No such thing as market orientation – a call for no more papers, *Management Decision*, 36(9): 598–609.

Hulland, J. (1999), Use of Partial Least Squares (PLS) in Strategic Management Research. *Strategic Management Journal*, 20(2): 195–204.

Hult, G.T.M., Hurley, R.F., and Knight, G.A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management,* 33(5): 429–438.

Jarvis, C.B., MacKenzie S.B., and Podsakoff P.M. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. *Journal of Consumer Research,* 30: 199–218.

Jaworski, B.J. and Kohli, A.K. (1993). Market orientation: antecedents and consequences. *Journal of Marketing,* 57(3): 53–70.

Jeong, I., Pae J. H., and Zhou, D. (2006). Antecedents and consequences of the strategic orientations in new product development: The case of Chinese manufacturers. *Industrial Marketing Management*, 35(3): 348–358.

Jokipii, A. (2006). *The structure and effectiveness of internal control: A contingency approach*. Vaasa: Acta Wasaensia 166.

Jones, C. (2004). An alternative view of small firm adaptation. *Journal of Small Business and Enterprise Development* 11(3): 362–370.

Jones, C., Hecker, R., and Holland, P. (2003). Small firm Internet adoption: opportunities forgone, a journey not begun. *Journal of Small Business and Enterprise Development*, 10(3):287–97.

Kaya, N. and Seyrek, I.H. (2005). Performance Impacts of Strategic Orientations: Evidence from Turkish Manufacturing Firms. *Journal of American Academy of Business*, 6(1): 68–71.

Kirca, A.H., Jayachandran, S., and Bearden, W.O. (2005). Market Orientation: A Meta-Analytic Review and Assessment of Its Antecedents and Impact on Performance. *Journal of Marketing,* 69(2): 24–41.

Kohli, A.K. and Jaworski, B.J. (1990). Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing,* 54(2): 1–18.

Li, Y., Zhao, Y., Tan, J., and Liu, Y. (2008). Moderating effects of Entrepreneurial Orientation on Market Orientation-Performance Linkage: Evidence from Chinese Small Firms. *Journal of Small Business Management,* 46(1): 113–133.

Lumpkin, G.T. and Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review,* 21(1): 135–172.

Lumpkin, G.T. and Dess, G.G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role of environment and industry lifecycle. *Journal of Business Venturing*, **16**:429–451.

Lyon, D.W., Lumpkin, G.T., and Dess, G.G. (2000). Enhancing Entrepreneurial Orientation research: Operationalizing and Measuring a key Strategic Decision Making Process. *Journal of Management,* 26(5): 1055–1085.

Mintzberg, H. (1979). The structuring of organizations. Englewood Cliffs, NJ: Prentice-Hall.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms, *Management Science,* 29(7): 770–790.

Miller, D. and Friesen, P.H. (1982). Innovation in conservative and entrepreneurial firms: two models of strategic momentum. *Strategic Management Journal,* 3(1): 1–25.

Murphy, G.B. and Callaway, S.K. (2004). Doing well and happy about it? Explaining variance in entrepreneurs'stated satisfaction with performance. *New England Journal of Entrepreneurship* 7(2): 15–26.

Murphy, G.B., Trailer, J.W., and Hill, R.C. (1996). Measuring performance in entrepreneurship research. *Journal of Business Research,* 36(1): 15–23.

Narver, J.C. and Slater, S.F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing,* 54(4): 20–35.

Narver, J.C., Slater, S.F., and MacLachlan, D.L. (2004). Responsive and Proactive Market Orientation and New-Product Success. *Journal of Product Innovation Management* 21(1) 334–347.

Noble, C.H., Sinha, R.K., and Kumar, A. (2002). Market Orientation and Alternative Strategic Orientations: A Longitudinal Assessment of Performance Implications. *Journal of Marketing,* 66(4): 25–39.

Ouchi, W.G. (1980). Markets, bureaucracies and clans. *Administrative Science Quarterly,* 25(3): 129–141.

Pelham, A.M. (2000), "Market orientation and other potential influences on performance in small and Medium Sized Manufacturing Firms". *Journal of Small Business Management,* 38(1): 48–67.

Podsakoff, P.M. and Organ, D.W. (1986). Self-reports in Organizational Research: Problems and Prospects. *Journal of Management,* 12(4): 531–544.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., and Podsakoff, N.P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies". *Journal of Applied Psychology,* 88(5): 879–903.

Ringle, C.M., Wende, S., and Will, A. (2005). *SmartPLS 2.0.M3*. URL: http://www.smartpls.de, accessed 19.12.2008.

Runyan, R., Droge, C., and Swinney, J. (2008). Entrepreneurial Orientation versus Small Business Orientation: What Are Their Relationships to Firm Performance? *Journal of Small Business Management,* 46(4): 567–588.

Rönkkö, M., Eloranta, E., Mustaniemi, H., Mutanen, O.P., and Kontio, J. (2008), *Finnish Software Product Business: Results of the National Software Industry Survey 2007*, Helsinki University of Technology report available at http://www.swbusiness.fi/portal/research_insights/reports/?r_id=341 (accessed 15.3.2010) ISBN 978-951-22-9040-6

Salavou, H. (2005). Do Customer and Technology Orientations Influence Product Innovativeness in SMEs? Some New Evidence from Greece. *Journal of Marketing Management,* 21(3/4): 307-338.

Schindehutte, M., Morris, M.H., and Kocak, A. (2008). Understanding Market-Driving Behavior: The Role of Entrepreneurship. *Journal of Small Business Management,* 46(1): 4–26.

Shoham, A., Rose, G.M., and Kropp, F. (2005). Market orientation and performance: a meta-analysis. *Marketing Intelligence and Planning,* 23(4/5): 435–454.

Slater S.F. and Narver, J.C. (1995). Market orientation and the learning organization. *Journal of Marketing,* 59(3): 63–74.

Slater S.F. and Narver, J.C. (2000). The Positive Effect of a Market Orientation on Business Profitability: A Balanced Replication. *Journal of Business Research,* 48(1): 69-73.

Smart, D.T. and Conant, J.S. (1994). Entrepreneurial orientation, distinctive marketing competencies and organizational performance. *Journal of Applied Business Research,* 10(3): 28–38.

Statistics Finland (2009). *Informaatiopalvelujen tilinpäätöstilasto 2008*. Tilastokeskus, Helsinki. available at http://www.stat.fi/til/iptp/2008/iptp_2008_2009-07-08_fi.pdf visited 10.3.2010.

Tabachnick, B.G. and Fidell, L.S. (2007). "*Using Multivariate Statistics"*. Boston: Pearson.

Tenenhaus, M., Vinzi, V.E., Chatelin, Y.M., and Lauro, C.C. (2005). PLS path modelling. *Computational Statistics and Data Analysis,* 48(1): 159–205.

Van de Ven, A.H. (1986). Central Problems in the Management of Innovation. *Management Science,* 32(5): 590–608.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality, and measurement. *Management Science*, 35(8): 942–962.

Vesalainen, J. (1995). *The small firm as an adaptive organization: Organizational adaptation versus environmental selection within environmental change*. Acta Wasaensia no. 16. ISBN 951-683-565-1, University of Vaasa, Finland.

Von Hippel, E. and Katz, R. (2002). Shifting innovation to users via toolkits. *Management Science*, 48(7): 821–833.

Voss, G.B. and Voss, Z.G. (2000). Strategic orientation and Firm performance in an artistic environment. *Journal of Marketing,* 64(1): 67–83.

Werner, S., Praxedes, M., and Kim, H.G. (2007). The Reporting of Nonresponse Analyses in Survey Research. *Organizational Research Methods*, 10(2): 287–295.

West, J. and Mace, M. (2010). Browsing as the killer app: Explaining the rapid success of Apple's iPhone. *Telecommunications Policy,* In Press.

Wiklund, J. (1999). The sustainability of the Entrepreneurial Orientation – Performance relationship. *Entrepreneurship Theory and Practice,* 24(1): 37–48.

Wiklund, J. and Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing,* 20(1): 71–91.

Wolff, J.A. and Pett, T.L. (2006). Small-Firm Performance-Modeling the Role of Product and Process Improvements. *Journal of Small Business Management,* 44(6): 268–284.

Yung, Y.F. and Bentler, P.M. (1996). Bootstrapping Techniques in Analysis of Mean and Covariance Structures in George A. Marcoulides and Ramdall E. Schumacker (eds) *Advanced Structural Equation Modelling: Issues and Techniques*, 195–226. Mahwah: Erlbaum.

Zahra, S.A. and Covin, J.G. (1995). Contextual influence on the corporate entrepreneurship-performance relationship: a longitudinal analysis. *Journal of Business Venturing,* 10(1): 43–58.

Zheng, Z.K., Yim, C.K., and Tse, D.K. (2005) The Effects of Strategic Orientations on Technology- and Market-Based Breakthrough Innovations. *Journal of Marketing*, 69(2): 42–60.

.

**Appendix A.** Means, standard deviations (SD), loadings of the reflective constructs and path coefficients of the formative constructs.

| Constructs and items (all measured on 5-point Likert-scales) | Mean | SD | Path coefficient/ loading |
|---|---|---|---|
| **Entrepreneurial orientation** (Covin and Slevin, 1989; Wiklund, 1999) | | | |
| *Innovativeness* (α = .75) | | | .40** |
| We emphasise R&D, technological leadership and innovativeness instead of trusting only those products and services, which we have traditionally found to be good | 3.70 | 1.02 | |
| Within the last five years, we have brought several new products or services to the market | 3.41 | 1.18 | |
| Within the last five years, the changes in our product lines have been dramatic | 2.94 | 1.18 | |
| Innovations are appreciated above everything else | 3.04 | 1.01 | |
| *Risk taking* (α = .91) | | | .09 |
| In our company, many people want to take risks | 2.99 | .97 | |
| We think that bold and wide-ranging actions are needed to achieve our goals | 3.26 | 1.04 | |
| We emphasise risk taking instead of being careful | 2.77 | .92 | |
| We emphasise risk taking | 3.06 | .90 | |
| *Proactiveness* (α = .86) | | | .65*** |
| We intend to get into markets before our competitors | 3.53 | .99 | |
| We do things which our competitors then respond to | 3.27 | 1.08 | |
| In our company people want to be first in the markets | 3.23 | 1.01 | |
| We are typically ahead of competitors in presenting new products or procedures | 3.30 | 1.16 | |
| **Customer orientation** (Narver and Slater 1990; Li *et al*. 2008) (α = .79, CR= .85, AVE=.54). | | | |
| We emphasise the meaning of customer satisfaction | 4.51 | .61 | .73*** |
| We emphasise the meaning of understanding the needs of our customers | 4.57 | .63 | .76*** |
| We measure customer satisfaction on a regular basis | 3.01 | 1.22 | .66*** |
| We focus on the level of our customer service | 3.96 | .88 | .83*** |
| Our customers are very committed | 3.98 | .83 | .70*** |
| **Technology/product orientation** (Derozier, 2003) (α = .87, CR= .90, AVE=.65 ). | | | |
| Our products include high technology ones | 3.18 | 1.19 | .81*** |
| We are very active in developing new technologies | 3.11 | 1.17 | .86*** |
| We intend to develop new technologies in order to respond to changing expectations among our customers | 3.60 | 1.18 | .82*** |
| We have better technological knowledge than our competitors | 3.47 | 1.09 | .76*** |
| Our product development programs are more ambitious than our competitors'ones | 3.14 | 1.07 | .77*** |
| **Performance** (Gibson and Birkinshaw, 2004; Wolff and Pett, 2006) (α = .70, CR= .83, AVE=.62) | | | |
| The owners are satisfied with the company performance | 3.40 | 1.03 | .84*** |
| Our company is growing very rapidly in comparison to our competitors | 2.95 | 1.20 | .74*** |
| Our company is very profitable in comparison to our competitors | 3.28 | 1.08 | .79*** |
| **Environmental uncertainty** (Jokipii, 2006) (α = .64, CR= .80, AVE=.57 ) | | | |
| The needs of our customers change very rapidly | 3.05 | .99 | .72** |
| Products and services are customized | 3.52 | 1.26 | .68** |
| Products and services need constant revision | 3.28 | .99 | .87*** |
| **Company size** | | | |
| Revenue 2007 | 2.9m | 5.2m | 1.0 |

***p ≤ 0.001 **p ≤ 0.01 *p ≤ 0.05 † p ≤ 0.1 (one-sided test)
α = Cronbach's alpha, CR=Composite Reliability, AVE=Average Variance Extracted

# ARTICLE 4

# The Relationship between Entrepreneurial and Learning Orientation: Effects on Growth and Profitability

Henri Hakala

## Abstract

Both entrepreneurial and learning orientation have been found to be important ingredients in creating firm performance, but their relationship is understudied and prior studies have not considered their relationship separately on different dimensions of performance. Using data from 192 software companies, this paper explores the mediating relationships between entrepreneurial and learning orientation on the growth and profitability dimensions of performance. The findings indicate that learning mediates the effects of entrepreneurial orientation on profitability. In contrast, the learning orientation – growth relationship appears to be mediated by entrepreneurial orientation. The findings highlight the need for balancing entrepreneurial and learning oriented behaviours.

# Introduction

Entrepreneurial orientation (EO) is a strategic orientation that represents the character of organizations in terms of risk taking, proactiveness and innovativeness (Miller 1983; Covin and Slevin 1989). EO has received considerable attention and its positive association with performance has been found robust across a number of different operational and cultural contexts (Rauch, Wiklund, Lumpkin and Frese 2009). However, prior research suggests that the examination of the direct EO-performance relationship provides an incomplete picture (Lumpkin and Dess 1996; Wiklund and Shepherd 2005). Entrepreneurial exploration of opportunities creates knowledge that needs interpreted in order to channel the entrepreneurial activity towards successful business activity (Wang 2008). Organizational learning orientation (LO) relates to the development and use of knowledge and may support the activities of an entrepreneurial organization in its quest for performance by aligning the visions that organization members have. It is also reflected through open-mindedness and the commitment the organization puts into learning (Baker and Sinkula 1999; Hult, Hurley and Knight 2004). Recent articles suggest that organizational learning orientation (Wang 2008) or experimental learning (Zhao, Li, Lee and Chen 2010) are important in maximising the effects of EO on performance, but derive their results from larger organizations, while this study focuses on the SMEs in the fast-paced software industry.

Prior research has explored the performance effects of both EO and LO in separate studies, but a literature search reveals only a handful of studies investigating these together. Yet, these different organizational strategies may support one another (Wang 2008). However, these activities may have different effects on the dimensions of organizational performance (Ray, Barney and Muhanna 2004) and actions that may lead to favourable outcomes on one dimension of performance, may even be detrimental to others (Lumpkin and Dess 1996). The prior studies on the EO-LO relationship, treat performance as a one-dimensional overall performance, and fail to consider how these separate dimensions are affected by the phenomenon under investigation, while this study assesses the EO-LO relationship separately in relation to growth and profitability. Specifically, is the EO-performance relationship mediated by LO and does the relationship differ depending on the dimension of performance under investigation? Using the partial least squares (PLS) approach and data from 192 small and medium-sized software companies in Finland, the study contributes by providing further evidence of the mediating effects of LO in between EO and performance. In addition, the study

contributes by exploring the possibility that the relationship between EO and LO may be different on different dimensions of performance.

# The Relationship between EO and LO

### Conceptualization of EO and LO

EO is a strategic orientation that captures the entrepreneurial aspects of firms' strategies (Bhuian, Menguc and Bell 2005; Covin and Slevin 1989; Lumpkin and Dess 1996; Hult et al. 2004; Wiklund 1999; Wiklund and Shepherd 2005). The entrepreneurial tendencies toward risk taking, innovativeness and proactiveness are considered to be the most central to EO (Miller 1983; Covin and Slevin 1989). The literature also contains other alternative conceptualizations; for example Lumpkin and Dess's (1996) conceptualization of EO added competitive aggressiveness and a tendency towards independent and autonomous action as important dimensions of entrepreneurship, and the debate on what constitutes EO is ongoing (see for example Rauch et al. 2009). Given that it is not within the focus of this study to further this debate as such, the paper adopts the most commonly utilised, three-dimensional measure of EO. The main proposition of EO is that organizations acting entrepreneurially are better able to adjust their operation in dynamic competitive environments (Covin and Slevin 1989). Given the rapid pace of change in the software industry, EO should therefore manifest itself in successful software companies.

LO represents the propensity of organizations to create and use knowledge (Sinkula, Baker, and Noordewier 1997) in order to attain competitive advantage (Calantone, Cavusgil and Zhao 2002). Learning may be interpreted along the lines of Huber (1991) as the development or acquisition of new knowledge that has the potential to influence behaviour. A more rigorous view assumes that learning actually results in new behaviours or value creation (Argyris and Schön 1978). Sinkula et al. (1997) conceptualize LO in the dimensions of shared vision, openmindedness and commitment to learn, while some researchers have also included intraorganizational knowledge sharing (Calantone et al. 2002). LO reflects the organizations' propensity to continuously question the basic assumptions it has made on its business and environment. LO is seen to align the vision organization members have about the future and is also reflected in the value the organization assigns to learning or its commitment to it (Baker and Sinkula 1999; Hult et al. 2004).

**The Direct Relationship between EO, LO and Performance**

Empirical studies have for the most part found that EO supports firm performance, although to a varying degree, and depending on the type of performance measure used (Rauch et al. 2009). EO is seen to aid in capitalizing emerging opportunities or in the development of new products, services or businesses within the existing business and thus, drive organizational performance (Bhuian et al. 2005; Hult et al. 2004; Luo, Sivakumar and Liu 2005; Wiklund 1999). Continuous learning – be it from markets or entrepreneurial activities – reflected in the LO, can be seen to drive continuous improvement of efficiency and may thus also have a direct impact on the performance of the firm. Studies have found direct effects between LO and various firm performance measures (Baker and Sinkula 1999; Calantone et al. 2002). Sadler-Smith, Spicer and Chaston (2001) found also the link between LO and growth in the manufacturing sector, but not in the business services sector.

A systematic search (based on guidelines by Tranfield, Denyer and Smart 2003) of three databases (Ebsco, Science Direct and ProQuest), reveals only a handful of studies investigating EO and LO within the same study. Most of these studies suggest that EO and LO correlate with each other and with performance, but investigate only the direct effects of each orientation (Barrett, Balloun and Weinstein 2005a; 2005b; Kropp, Lindsay and Shoham 2006; Liu, Luo and Shi 2003) These studies have found that both have positive associations with performance in US service industries (Barrett et al. 2005a), performance of non-profit organizations (Barrett et al. 2005b), export venture performance (Kropp et al. 2006) or marketing program dynamism in Chinese state-owned companies (Liu et al. 2003). Hence, the following direct effect hypotheses are warranted;

*H1a) EO has a direct effect on performance (growth and profitability)*
*H1b) LO has a direct effect on performance (growth and profitability)*

**The Mediating Effects of LO and EO**

While prior studies have suggested that both EO and LO are beneficial to performance, the relationship may be more complicated that simple direct effects (Wiklund and Shepherd 2005). The actual relationship between EO and LO remains understudied (Wang 2008) but two prior studies (Liu, Luo and Shi 2002; Wang 2008) have suggested that LO mediates the EO-performance relationship. Liu et al. (2002) focus on Chinese state-owned enterprises and find that LO mediates the

relationship between EO and organizational outcome in marketing program dynamism (product mix, change in brand mix, change in selling strategies and the change in sales promotion and advertising strategies). Wang (2008) found a similar mediating effect between EO and overall performance within a sample of medium-to-large UK based companies (measured with a hybrid of return on capital employed, sales growth and earnings per share). The argument for the mediating effects of LO in the EO-performance relationship is twofold. First, entrepreneurial, risk tolerant and innovative firms encourage new ways of thinking and provide a non-hierarchical environment to test out new ideas, creating a fertile, open atmosphere for learning. Second, entrepreneurial proactivity and the search for new opportunities generate material for the acquisition and evaluation of new information. Yet, information also needs to be channelled, via common goals and vision, into activities that are beneficial to performance (Wang 2008). Thus, prior theory on the EO-LO relationship support the hypothesis:

> *H2) The EO–performance (growth and profitability) relationship is mediated by LO*

However, prior studies on the EO-LO relationship have treated performance as a one-dimensional overall performance, and failed to consider if the relationship between EO and LO remains the same in relation to profitability and growth. Also, some studies (Hult et al. 2004; Rhee, Park and Lee 2010; Zhou, Yim and Tse 2005;) have presented the relationship between EO and LO differently. Hult et al. (2004) did not find any direct links between LO and performance and suggest that LO would have to be mediated by some other construct in order to have an effect on performance. Zhou et al. (2005) and Rhee et al. (2010) suggest that innovativeness operates as the mediator between LO and performance. These studies perceive EO as a two-dimensional phenomenon including proactiveness and risk taking (4-5 items). Their arguments suggest that innovativeness – a firms' capacity to introduce new products, services or processes – is born out of learning from its entrepreneurial proactiveness, risk taking and market-oriented behaviours. Considering innovativeness to be part of the EO, this would suggest that some dimensions of EO act as antecedents of learning, while others mediate its effects on performance. Thus, LO, in its ability to acquire, evaluate and turn information into a shared vision – needs entrepreneurial innovativeness to make the shared visions turn into activity. Recently Anderson, Covin, and Slevin (2009) also raised the possibility of a reciprocally causal relationship between EO and their construct of strategic learning. This creates a cycle where EO contributes to increase learning that in turn strengthens the confidence of the firm in entrepreneurial actions (Anderson et al. 2009). In other words, LO may also be a cause for entrepreneurial behaviours. The continuous questioning of the current idea of the

business could cause firms to change between entrepreneurial and conservative strategic postures during their lifetime (Lumpkin and Dess 2001; Wiklund 2006 in Anderson et al. 2009). Therefore, this paper also investigates this opposite possibility, and hypothesizes:

> *H3) The LO–performance (growth and profitability) relationship is mediated by EO*

In summary, prior studies have posited EO as an antecedent of LO and suggested that the link between EO and performance is mediated by LO (Wang 2008; Liu et al. 2002), or suggested reciprocal causal relationships between the EO and strategic learning (Anderson et al. 2009).

**Performance Dimensions and Control Variables**

Researchers generally agree that organizational performance is a multidimensional construct and recognise that different organizational strategies and activities may have different effects on the dimensions of organizational performance (Ray et al. 2004, Lumpkin and Dess 1996). Yet, prior studies have investigated the relationship with various hybrid measures of performance that tend to correlate with both measures for growth and measures for accounting returns (Combs, Crook and Shook 2005). It is probably best to avoid using hybrid measures that capture several of these dimensions simultaneously and while it is advisable to collect measures from different dimensions, these should not be triangulated as if they formed a one-dimensional 'performance' construct (Combs et al. 2005). The dimensionality of the performance should be used to test the limits of theory and to build separate bodies of knowledge around each dimension. Thus, this study investigates the EO-LO relationship separately on two dimensions of performance (growth and profitability), as both the direct effects and the relationship between EO and LO may depend on the type of performance measured.

In addition to the type of performance measure, the operating environment may also have significant impact on the relationship between EO and LO. Consequently, the study opted to focus on a single industry; namely software companies operating in an environment with a rapid pace of change and technological development. Furthermore, the study by Wang (2008) suggested that future studies should consider the effects of the size and age of the firms; thus we have included these as controls in our study. The following section will detail the sample, analytical strategy and methods.

# Methods

### Sample and Data Collection

The Finnish software industry was chosen as appropriate to test the hypotheses for two main reasons. The industry is showing some signs of maturing and is characterised by growth, an emphasis on product and service development and attempts to internationalize (Rönkkö et al. 2007); thus it seems logical for both EO and LO to be relevant strategic orientations for software companies. The software industry is known to be dynamic and uncertain and therefore, these companies are likely to need entrepreneurial as well as learning abilities. Second, the industry is known for its small and medium-sized companies, and while earlier studies focusing on the relationship between EO and LO have been conducted in medium or large companies (Wang 2008) or Chinese state-owned companies (Liu et al. 2002) the focus on SMEs in the fast-paced software sector was deemed an appropriate extension to prior knowledge.

The data for this study was collected in 2009 from managing directors using an e-mailed cover letter and a web-based questionnaire instrument. The sampling frame (n=1161) of software companies was drawn from the official Statistics Finland database, and included all Finnish software companies with 5 or more employees. Following the e-mailed questionnaire, researchers attempted to contact all companies that had not responded by phone and prompted them to answer the questionnaire. Following two additional e-mail reminders for non-respondents, a total of 210 responses were received. After discounting the incomplete responses, and companies with more than 500 employees (corresponding to the EU definition of the SME), 192 usable responses from SMEs remained. While the response rate of 18 percent is acceptable for this type of survey (Baruch 1999), there is always a risk of non-respondent bias. To examine this, the respondents were first compared to the non-respondent group in terms of the variables available from the company register for revenue, profit and age. While the respondents did not differ from the sampling frame in terms of officially reported revenue or profit, we did find a somewhat significant ($p < 0.05$), but small difference in terms of company age. The average age of the responding firms was 11.7 years, compared to the non-respondents' average of 13.7 years. Additionally, a second procedure to examine non-respondent bias was used, as suggested by Armstrong and Overton (1977) and Werner, Praxedes and Kim (2007). The procedure compares the early and late respondents and suggests that late respondents are similar to non-respondents. The results revealed that early and late respondents did not differ significantly. Based on these tests, it appears that the data is satisfactorily free

from nonresponse bias, but we acknowledge that our data represents software companies that are somewhat younger than the sector average. Overall, the respondents have an average annual turnover (median in brackets) of €6.85m (€1.76m), have a return on investment (ROI) of ca. 30.5 percent (31.0 percent), employ 69 (26) people and have been in business for 11.7 (9.0) years.

**Analytical Techniques**

The data analysis of this study adopts a two-step procedure. The first assesses the measurement models using factor analysis. The second analyzes the path relationships in the structural model by means of the Partial Least Squares (PLS) approach to Structural Equation Modeling (SEM) (Chin, 1998). The structural analysis was conducted with the software package SmartPLS 2.0 M3 (Ringle, Wende and Will 2005). PLS utilises a path-weighting scheme, an iterative estimation process, which considers the directions of the causal relationships between dependent and independent variables (Chin 1998). A standard bootstrapping procedure with 500 resamples was utilised (Yung and Bentler 1996). Testing the hypotheses involved the calculation of two separate models, one testing the mediating effect of LO and the second positing LO as an antecedent of EO, thus testing the mediating effect of EO. In addition, a reduced model was first calculated for both models, which tests the direct influence of EO and LO on the two dimensions of performance, before adding the mediating construct (Baron and Kenny 1986). Thus, H1a and H1b were first tested via the reduced models, and H2 and H3 via the mediation models on both dimensions of performance.

**Measures**

The specification of the measurement model is necessary before the interpretation of the structural model (Anderson and Gerbing 1988). Jarvis, MacKenzie and Podsakoff (2003) found that many studies, even in top-tier journals, have incorrectly specified measurement models as reflective, while the use of formative indicators would have been more appropriate. While reflective and formative measurement models also require different approaches to reliability and validity assessment, the criterion suggested by Jarvis et al. (2003) was used to determine whether a construct should be modelled as having formative or reflective indicators. As a result, the research model comprises four latent variables. EO and LO are considered as formative second order constructs with reflective dimensions, while the two types of organizational performance are operationalized with reflective measurement models. The use of EO and LO as formative constructs within

the PLS permits the assessment of both the effect of the whole multidimensional construct through path coefficients and also the outer weights that signal the effect of the individual dimensions.

*Formative Measurement Models.* An exploratory factor analysis using SPSS software was first conducted on all items of the LO and EO using principal axis factoring followed by oblique rotation (Direct oblimin with Kaiser normalization). The survey contained a total of 30 potential items adopted or developed on the basis of prior studies. Some items were dropped during multiple rounds of factor analysis in order to ensure the internal consistency of the measures in each dimension and also coverage of all the phenomena and comparability with previous studies.

The measure utilised for EO consists of 9 items in three dimensions that were adapted from prior studies. Innovativeness is assessed with three items asking the managers about the level of new product introductions and changes in product line in the past five years (Miller and Friesen 1982) and RandD expenditure in comparison to competitors (Wolff and Pett 2006). The items for proactiveness are adopted from Lumpkin and Dess (2001), but two of the items also correspond to Covin and Slevin (1989). They measure the firms' tendency to lead rather than follow the market in introducing products, services or process innovations. Risk taking is assessed by the propensity to engage in risky projects and bold acts in order to achieve the objectives of the firm and counter environmental demands (Covin and Slevin 1989; Lumpkin and Dess 2001).

The study finds its 12 items for measuring the LO dimensions for commitment to learning, open-mindedness and shared vision courtesy of Sinkula et al. (1997) and Baker and Sinkula (1999), who also tested the scales. The eight items for commitment to learning and shared vision/purpose were directly adopted. Commitment to learning is measured by the value the firm puts on learning and to what extent the firm sees learning as investment, key to improvement, competitive advantage and organizational survival. The items for shared vision/purpose assess the extent to which the firm has developed common goals and directions to channel its learning into. The current study has to some extent developed the original items used for open-mindedness, and the dimension now encompasses the questioning of the assumptions made not only about customers and markets but also about the organization itself. It also operates at a more generic level of strategic knowledge rather than merely customer information. This development adds an additional item to the original 11-item scale devised by Sinkula et al. (1997).

The factor loadings for EO indicators of innovativeness range between 0.661 to 0991; proactiveness 0.641 to 0.943; and risk taking 0.424 to 0.877. The LO indicators also achieve high loadings ranging between .500 to .870 for commitment to learning; from .564 to .751 for shared vision/purpose; and from .487 to .876 for open-mindedness. All dimensions also achieve highly satisfactory Cronbach alpha values ranging from .740 to .852. The resulting six factor solution had all the high loadings on appropriate factors and only minor loadings on other factors (the highest side loading was .246) indicating both convergent and divergent validity for the indicator dimensions of EO and LO. All items and associated factor loadings are detailed within the appendix A.

To make the subsequent models more parsimonious without loss of information, items in each factor were calculated into average composite variables that were used as formative indicators of EO and LO respectively in the subsequent analysis. Since the indicators in a formative measurement model are causes, rather than effects, of the latent variable and are thus not required to be correlated, the reliability and validity measures based on internal consistency employed in the reflective measurement models are not meaningful, but the main concern is multicollinearity among the indicators (Diamantopoulos and Winklhofer 2001). Therefore, the variation inflation factors (VIF) of the indicators were calculated (table 1). These are clearly below the common cut-off threshold of 10, which indicates that multicollinearity is not a problem in the formative indices of this study, which overall, can be considered sufficiently reliable and valid for the subsequent evaluation of the structural model.

***Table 1 Formative Measurement Models***

| Index | **Indicator** | **Path coefficient/significance** | **VIF** |
|---|---|---|---|
| Entrepreneurial orientation | Proactiveness | 0.588*** | 1.749 |
| | Innovativeness | 0.545*** | 1.674 |
| | Risk taking | -0.013 ns. | 1.434 |
| Learning orientation | Commitment to learning | 0.213 ns. | 1.446 |
| | Shared Vision | 0.406* | 1.556 |
| | Open-mindedness | 0.598*** | 1.487 |

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ (one-sided t test with 500 df)

*Reflective Measurement Models.* Combs et al. (2005) suggest that measures for growth, accounting returns and stock market returns are three distinct dimensions of organizational performance. Use of hybrid measures that simultaneously capture several of these dimensions is probably best avoided, and while it is advisa-

ble to collect measures from different dimensions, these should not be triangulated as if they formed a one-dimensional 'performance' construct (Combs et al. 2005). While the measures of stock market returns are not relevant for the privately owned SMEs in the software sector, this study opted for the most commonly-used measures for growth and profitability (accounting returns) based on the study by Combs et al. (2005) with wording adapted from Wooldridge and Floyd (1990) and Covin, Prescott and Slevin (1990). The items for profitability measure satisfaction in terms of return on assets, net profit and return on investment, while the growth measures capture the satisfaction in terms of overall and sales growth rates.

The internal consistency and convergent and discriminant validity of these reflective measurement models, profitability and growth, were assessed using the PLS approach (Chin 1998). In addition to Cronbach's alpha (profitability = .86, growth = .76), PLS uses two further test statistics known as the composite reliability (profitability = .91 growth = .89) and the average variance extracted (AVE) (profitability = .78 growth = .81). Both reflective latent variables (Table 1) clearly exceed the recommended threshold values of 0.7 for Cronbach's alpha, 0.7 for composite reliability and 0.5 for AVE.

With respect to item discriminant validity, the PLS confirmatory factor analysis indicates that all indicators load at their highest with their respective construct and that no indicator loads higher on other constructs than on its intended construct (Chin 1998). It is therefore safe to assume item discriminant validity. At the construct level, the comparison of latent variable correlations and the square root of each reflective construct's AVE suggest that there is satisfactory discriminant validity (Chin 1998). Overall, the evaluation of the measurement models reveals that all study constructs are of satisfactory reliability and validity for the purposes of this analysis.

*Tests for Common Method Bias.* The choice of the single informant strategy introduces the possibility of a common method bias, although the extent of common method bias is generally below average in fields such as marketing and management (Cote and Buckley 1987). Lyon, Lumpkin, and Dess (2000) argue that actually, in smaller organizations, such as those represented in this study, there is a strong likelihood that the most knowledgeable person answers the survey and the views of this single respondent will reflect the view of the whole organization, rather than individual perceptions. Consequently, there is a justification in selecting a single informant strategy for this study dealing with software industry SMEs. Yet, several procedures were used to control the bias. The study applied various response formats; items belonging to different constructs were located in

different parts of the survey instrument and items were developed in a manner that attempted to reduce bias caused by social desirability (Podsakoff, MacKenzie, Lee and Podsakoff 2003). The design of the web-based questionnaire also allowed the respondent to pause and continue answering, enabling respondents to devote their full attention to answering the questions (Podsakoff et al. 2003). In addition, Harman's (1976) one-factor test was used to examine for common method bias (Podsakoff and Organ 1986). All variables of profitability, growth, EO and LO were entered into an exploratory factor analysis (principal axis factoring, oblimin) that revealed that there was no general factor that accounts for the majority of the variance. The first factor accounted for only 24.9 percent of the total variance, indicating that common method variance does not appear to be present in the data (Podsakoff and Organ 1986).

# Results

Table 2 reports the full results of the PLS modeling while a summary of the significant paths is presented in figure 1. The tests with reduced models suggest that both EO and LO have direct effects on both dimensions of performance under investigation, thus supporting the basic direct effect hypothesis 1a and 1b. However, when the mediating effect of LO is tested in Model 1, the picture changes. The results reveal that LO fully mediates the relationship between EO and profitability but does not appear to mediate the direct relationship between EO and growth, and thus suggest partial support for the hypothesis 2. Also hypothesis 3 is partially supported by model 2, which tests for the mediating effects of EO. The result suggest that the relationship between LO and growth is mediated by EO, but the relationship between LO and profitability remains direct. Overall, the combined result from the two models put forward the most important finding of the study. It appears that EO and LO mediate one another depending on the dimension of performance, suggesting that EO and LO act in synergetic manner in creation of profitability and growth.

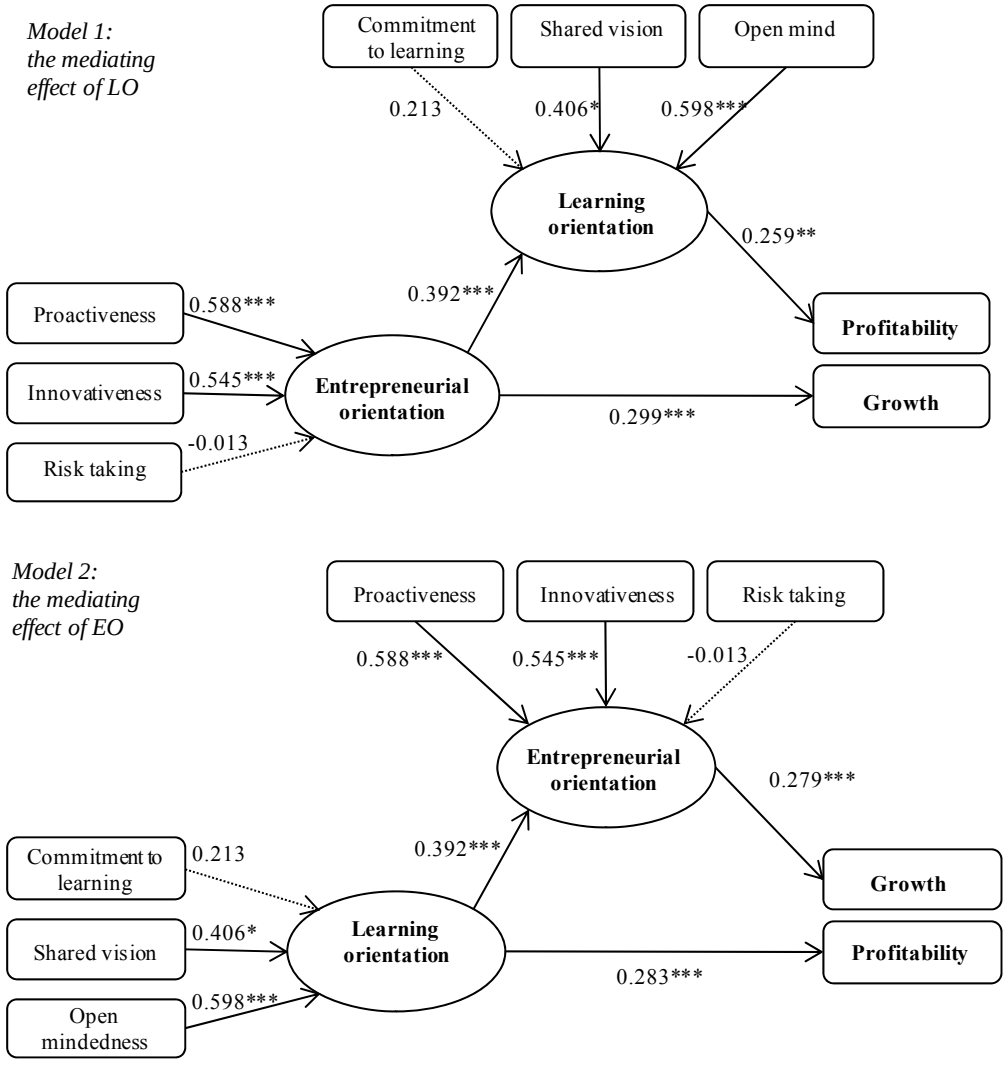
**Table 2. Estimation results of the PLS models**

| Exogenous variable | **Endogenous variable** | **Path coefficient** | **t value** | $f^2$ | $R^2$ | $Q^2$ |
|---|---|---|---|---|---|---|
| ***Direct effects*** | | | | | | |
| EO | Growth | 0.299 | 3.771*** | | 0.09 | 0.06 |
| | Profitability | 0.187 | 2.141* | | 0.04 | 0.02 |
| LO | Growth | 0.185 | 2.920** | | 0.03 | 0.03 |
| | Profitability | 0.283 | 4.100*** | | 0.08 | 0.06 |
| ***Model 1 – The mediating effect of LO*** | | | | | | |
| EO | | 0.392 | 6.053*** | 0.182 | | |
| | LO | | | | 0.15 | 0.09 |
| EO | | 0.279 | 3.285*** | 0.070 | | |
| LO | | 0.068 | 1.083 | 0.009 | | |
| | Growth | | | | 0.10 | 0.07 |
| EO | | 0.050 | 0.648 | | | |
| LO | | 0.259 | 3.017** | 0.047 | | |
| | Profitability | | | | 0.08 | 0.05 |
| ***Model 2 – The mediating effect of EO*** | | | | | | |
| LO | | 0.392 | 6.220*** | 0.182 | | |
| | EO | | | | 0.15 | 0.11 |
| EO | | 0.279 | 3.427*** | 0.009 | | |
| LO | | 0.068 | 1.081 | 0.070 | | |
| | Growth | | | | 0.10 | 0.07 |
| EO | | 0.050 | 0.674 | 0.047 | | |
| LO | | 0.259 | 3.140** | | | |
| | Profitability | | | | 0.08 | 0.06 |

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ (one-sided t test with 500 df)

Inspection of the formative measurement models (outer weights in Figure 1) reveals that the proactiveness and innovativeness dimensions in particular are significant factors of EO affecting both mechanisms for performance. Open-mindedness and shared vision seem to play their role and appear to be the significant dimensions of LO, while commitment to learning does not seem to have a significant effect on the relationships in these two models.

***Figure 1: Summary of the results (**** *p>0.001, **p>0.01, *p>0.05**)***
*Direct paths (dotted line) from EO to profitability (model 1) and LO to growth (model 2) become non-significant when the mediating variables are added.*




Two control variables, firm size and age, were utilised recursively (see for example Liñán and Chen 2009) to determine possible effects on all dependent variables. However, neither firm age (measured in years from formation) nor firm size (measured in number of employees), was found to exert a significant effect on the dependent variables in either of the models and were thus dropped from the final models (Srite and Karahanna 2006).

# Discussion

This study set out to explore the relationship between EO, LO and the growth and profitability dimensions of organizational performance. Prior studies have investigated EO and LO separately, or investigated only their direct effects. Studies on the actual relationship between EO and LO and their combined effects on performance are rare. In addition these studies utilise hybrid performance measures that combine both growth and profitability dimensions within the same dependent variable. Therefore this study adopted somewhat exploratory approach and investigated the EO-LO relationship separately on the dimensions of performance.

The study found that the EO–profitability relationship was fully mediated by LO in small to medium sized, Finnish software companies. The finding is consistent with a prior study (Wang 2008) that found a similar mediating effect between EO and 'overall' performance measure in medium-to-large companies in UK, but with an important difference. At the same time as LO mediates the relationship between EO and profitability, it does not appear to have a similar role in terms of company growth. EO appears to have a more direct relationship with growth measures of performance. This may be understood that learning processes overlook the long-term growth effects of entrepreneurial activity by enacting environments that are simplified and steer the organization towards specializing in them (Levinthal and March 1993). While learning helps the organization to develop better skills in some markets or technologies and become better at generating profits in them, it may overlook others possibilities, suggesting that the growth performance depends on the entrepreneurial persistence in proactively exploring new markets and innovations.

The second mediation model proposes that the relationship between LO and growth is fully mediated by EO suggesting that the same mechanism of learning that transmits the entrepreneurial activity into effective, profitable business may also act differently. It makes sense that, different type of learning, from past entrepreneurial behaviours, is also likely to help to identify new markets, not too far from the current competence of the organization, and the effect of learning becomes more indirect. Organizational learning tends to oversample successes over failures (Levinthal and March 1993), thus if the entrepreneurial activities have resulted in profitable business in the past, learning may encourage organization to maintain the entrepreneurial posture.

Taken together, the relationship between the LO and EO and performance is more complex than a simple antecedent-effect-performance. LO and EO appear to act together in a synergetic manner affecting one another in creating both growth and

profitability. The finding is thus, consistent with the proposal by Anderson et al. (2009) for reciprocal relationship between EO and strategic learning. The explanation for the reciprocal, synergetic relationship is complex, but extends our understanding of the EO-LO relationship. While prior study has suggested that entrepreneurial firms need to foster organizational learning to maximise the effects of EO on performance (Wang 2008) this study pinpoints that entrepreneurial firms should actually do this to develop the profitability dimension of performance. Entrepreneurial innovativeness and proactivity are necessary fundaments of growth, but simply not enough on their own. As suggested by March (1991), exploration of opportunities generates costs that need to be recouped and the result of this study suggest that learning from the entrepreneurial activity appears to guide the activity towards profitable actions. The shared vision on how to channel the innovation and proactivity combined with the open mind to also question these assumptions appears to support the profitability. Being proactively ahead of the competition may directly support the growth of the business, but may not be profitable course of action, unless the actions, ideas or products are critically evaluated for their ability to create profits. It appears that entrepreneurial innovations *need* the questioning of current beliefs and shared vision of LO to materialize on the bottom line, while growth is more directly dependent on the proactive search for innovations and on actions taken to get innovations to the market. Wang (2008) finds that the innovativeness component of EO, in particular, correlates with LO and explains this by the presence of an innovative attitude to business processes and continuous improvement. The results from the model two provide an important extension to this theory, and suggest that learning oriented organizations should foster entrepreneurship in order to generate growth. The shared vision and purpose of the learning orientation combined with the open mind to question the current ways of operation, appears to affect profitability through continuous, incremental improvement not far from the current domains of the company (Levinthal and March 1993). However, only if this attitude is balanced with elements of EO – proactive search of innovations, market areas and new product introductions – it will also support growth of the company.

## Research Limitations and further research

These results must be viewed in the light of the usual limitations of a single industry, cross-sectional survey with a limited sample. While any common method bias was controlled and Harman's one-factor test suggests that it is not present, one should bear in mind, that the procedure does nothing to statistically control for the common method effect; but is merely a diagnostic technique (Podsakoff et al. 2003). Thus, realistically, while the presence of common method bias does not

appear to be a problem, it can never be fully discounted in this type of survey. The study also relies on self-reported, subjective performance measures. Perceptual measures of performance have well-documented disadvantages, relating for example to measurement error or potential for common method bias (see Murphy and Callaway 2004). Yet, reliable and comparable profitability data would have been difficult, if not impossible, to obtain for the smaller firms in the sample. Furthermore, it could be argued that because the data was collected during a global downturn in 2009, the accounting based performance measures might also have been misleading indicators as many companies experienced significant performance deterioration irrespective of their strategic orientation. Realistically, and as the $R^2$ values of this study also illustrate, EO and LO explain only a small share of the variance in performance. However, the use of perceptual measures is common and prior studies imply that the subjective and objective measures are correlated, albeit representing different constructs of performance (for discussion see. Murphy and Callaway 2004; Murphy, Trailer and Hill 1996; Gupta and Govindarajan 1984). In addition, the results are derived from the data gathered from software businesses in Finland; further research is needed from other industries, cultures and under different economic conditions in order to extend the applicability of these results.

The study raises some interesting issues for further research to investigate in more detail. The results highlight the importance of treating performance as a truly multidimensional construct and testing the possibilities of reverse causality with regards to different dimensions of performance. These preliminary results suggest that the relationship between EO and LO shifts entirely depending on which dimension of performance is of current interest. Moreover, while the multidimensionality of performance is not a new issue, many studies still combine the different dimensions into single dependent variable. The findings of this study demonstrate that this may have a profound impact on the results and theory development. In this sense, the recommendation by Combs et al. (2005) to systematically build bodies of knowledge around each dimension of performance should be considered. Prior studies (Atuahene-Gima, Slater and Olson 2005; Baker and Sinkula 2009; Salavou 2005) have also found that concepts such as market or technology orientation correlate with EO and LO. Further study should seek to investigate several of these orientation concepts simultaneously in order to develop a more comprehensive view of the various configurations of entrepreneurial strategies.

Overall, the findings of this study highlight that both EO and LO have their role to play for software companies aspiring to profitable growth. The entrepreneurial growth companies should foster learning in order to develop profitability, while

the less entrepreneurial might seek growth by promoting entrepreneurial innovativeness and proactiveness within the organization.

## References

Anderson, B.S., J.G. Covin, and D.P. Slevin (2009). "Understanding the relationship between entrepreneurial orientation and strategic learning capability: An empirical investigation," *Strategic Entrepreneurship Journal* 3, 218–240.

Anderson, J.C. and D.W. Gerbing (1988). "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin* 103(3), 411–423

Argyris, C. and D.A. Schön (1978). *Organizational learning: A theory of action perspective.* Reading, MA: Addison-Wesley.

Armstrong, J.S. and T.S. Overton (1977). "Estimating nonresponse bias in mail surveys," *Journal of Marketing* 14(3), 396–402.

Atuahene-Gima, K., S.F. Slater, and E.M. Olson (2005). "The Contingent Value of Responsive and Proactive Market Orientations for New Product Program Performance," *Journal of Product Innovation Management* 22(6), 464–482.

Baker, W.E. and J.M. Sinkula (1999). "The synergistic effect of market orientation and learning orientation on organizational performance," *Academy of Marketing Science Journal* 27(4), 411–427.

Baker, W.E. and J.M. Sinkula (2009). "The complementary Effects of Market Orientation and Entrepreneurial Orientation on Profitability in Small Business," *Journal of Small Business Management* 47(4), 443–464.

Baron R.M. and D.A. Kenny (1986). "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations," *Journal of Personality and Social Psychology*, 51(6), 1173–1182.

Barrett, H., J. Balloun, and A. Weinstein (2005a). "Success Factors for Organizational Performance: Comparing Business Services, Health Care, and Education," *S.A.M. Advanced Management Journal* 70(4), 16–28.

Barrett, H., J. Balloun, and A. Weinstein (2005b). "The impact of creativity on performance in non-profits," *International Journal of Nonprofit and Voluntary Sector Marketing* 10(4), 213–223.

Baruch, Y. (1999). "Response Rate in Academic Studies – A Comparative Analysis." *Human Relations* 52(4), 421- 438.

Bhuian, S.N., B. Menguc, and S.J. Bell (2005). "Just entrepreneurial enough: the moderating effect of entrepreneurship on the relationship between market orientation and performance," *Journal of Business Research* 58(1), 9–17.

Calantone, R.J., S.T. Cavusgil, and Y. Zhao (2002). "Learning orientation, firm innovation capability, and firm performance," *Industrial Marketing Management* 31(6), 515– 524.

Chin, W.W. (1998). "The Partial Least Squares Approach to Structural Equation Modeling," in *Modern Methods for Business Research.* Ed. G.A. Marcoulides. Mahwah: Lawrence Erlbaum, 295–336.

Combs, J.G., T.R. Crook, and C.L. Shook (2005). "The dimensionality of organizational performance and its implications for strategic management research," In *Research Methodology in Strategy and Management, Volume 2*. Eds. Ketchen, D.J. Jr., and Bergh D.D. Elsevier. 259–286.

Cote, J.A. and R. Buckley (1987). "Estimating trait, method, and error variance: Generalizing across 70 construct validation studies," *Journal of Marketing Research* 24, 315–318.

Covin, J.G. and D.P. Slevin (1989). "Strategic management of small firms in hostile and benign environments," *Strategic Management Journal* 10(1), 75–87.

Covin, J.G., J.E. Prescott, and D.P. Slevin (1990). "The effects of technological sophistication on strategic profiles, structure and firm performance," *Journal of Management Studies* 27(5), 485–510.

Diamantopoulos, A., and H.M. Winklhofer (2001). "Index Construction with Formative indicators: An alternative to Scale Development," *Journal of Marketing Research* 38, 269–277.

Gupta, A.K. and V. Govindarajan (1984). "Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation," *Academy of Management Journal* 27(1), 25–41.

Harman, H.H. (1976). *Modern Factor Analysis*. 3rd edition, Chicago: University of Chicago Press.

Huber, G. P. (1991). "Organizational learning: The contributing processes and the literatures," *Organization Science* 2(1), 88–115.

Hult, G.T.M., R.F. Hurley, and G.A. Knight (2004). "Innovativeness: Its antecedents and impact on business performance," *Industrial Marketing Management* 33(5), 429–438.

Jarvis, C.B., S.B. MacKenzie, and P.M. Podsakoff (2003). "A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research," *Journal of Consumer Research* 30, 199–218.

Kropp, F., N.J. Lindsay, and A. Shoham (2006). "Entrepreneurial, market, and learning orientations and international entrepreneurial business venture performance in South African firms," *International Marketing Review* 23(5), 504–523.

Levinthal D.A and J.G. March (1993). "The myopia of learning," *Strategic Management Journal* 14, 95–112.

Liñán, F. and Y.W. Chen (2009). "Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions," *Entrepreneurship Theory and Practice* 33(3), 593–617.

Liu, S.S., X. Luo, and Y.Z. Shi (2002). "Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: an empirical study," *International Journal of Research in Marketing* 19(4), 367–382.

Liu, S.S., X. Luo, and Y.Z. Shi (2003). "Market-oriented organizations in an emerging economy: A study of missing links," *Journal of Business Research 56*(6), 481–491.

Lumpkin, G.T. and G.G. Dess (1996). "Clarifying the entrepreneurial orientation construct and linking it to performance," *Academy of Management Review* 21(1), 135–172.

Lumpkin G.T. and G.G. Dess (2001). "Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role of environment and industry lifecycle," *Journal of Business Venturing* 16, 429–451.

Luo, X., K. Sivakumar, and S.S. Liu (2005). "Globalization, Marketing Resources, and Performance: Evidence From China," *Academy of Marketing Science Journal* 33(1), 50–65.

Lyon, D.W., G.T. Lumpkin, and G.G. Dess (2000). "Enhancing Entrepreneurial Orientation research: Operationalizing and Measuring a Key Strategic Decision Making Process," *Journal of Management* 26(5), 1055–1085.

March, J. (1991). "Exploration and exploitation in organizational learning," *Organization Science* 2(1), 71-87.

Miller, D. (1983). "The correlates of entrepreneurship in three types of firms," *Management Science* 29(7), 770–790.

Miller, D. and P.H. Friesen (1982). "Innovation in conservative and entrepreneurial firms: two models of strategic momentum," *Strategic Management Journal* 3(1), 1–25.

Murphy, G.B. and S.K. Callaway (2004). "Doing well and happy about it? Explaining variance in entrepreneurs'stated satisfaction with performance," *New England Journal of Entrepreneurship* 7(2), 15–26.

Murphy, G.B., J.W. Trailer, and R.C. Hill (1996). "Measuring performance in entrepreneurship research," *Journal of Business Research* 36(1), 15–23.

Podsakoff, P.M. and D.W. Organ (1986). "Self-reports in Organizational Research: Problems and Prospects," *Journal of Management* 12(4), 531–544.

Podsakoff, P.M., S.B. MacKenzie, J.Y. Lee, and N.P. Podsakoff (2003). "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology* 88(5), 879–903.

Rauch, A., J. Wiklund, G.T. Lumpkin, and M. Frese (2009). "Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future," *Entrepreneurship Theory and Practice* 33(3), 761-787.

Ray, G., J.B. Barney, and W.A. Muhanna (2004). "Capabilities, business processes and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view," *Strategic Management Journal* 25, 23–37.

Rhee, J., T. Park, and D.H. Lee (2010). "Drivers of innovativeness and performance for innovative SMEs in South Korea: Mediation of learning orientation," *Technovation* 30, 65–75.

Ringle, C.M., S. Wende, and A. Will (2005). SmartPLS 2.0.M3. URL: http://www.smartpls.de, accessed 20.04.2010.

Rönkkö, M., E. Eloranta, H, Mustaniemi, O.P. Mutanen, and J. Kontio, (2007), *Finnish Software Product Business: Results of the National Software Industry Survey 2007*, Helsinki University of Technology report available at www.swbusiness.fi (accessed 15.1.2010), ISBN 978-951-22-9040-6.

Sadler-Smith, E., D.P. Spicer, and I. Chaston (2001). "Learning Orientations and Growth in Smaller Firms," *Long Range Planning* 34, 139-158.

Salavou, H. (2005). "Do Customer and Technology Orientations Influence Product Innovativeness in SMEs? Some New Evidence from Greece," *Journal of Marketing Management* 21(3/4), 307–338.

Sinkula, J.M., W.E. Baker, and T. Noordewier (1997). "A framework for market-based organizational learning: Linking values, knowledge, and behavior," *Academy of Marketing Science Journal* 25(4), 305–318.

Srite, M. and E. Karahanna (2006). "The role of espoused national cultural values in technology acceptance," *MIS Quarterly* 30(3), 679–704.

Tranfield, D., D. Denyer, and P. Smart (2003). "Towards a methodology for developing evidence informed management-knowledge by means of systematic review," *British Journal of Management* 14(3), 207–222.

Wang, C.L. (2008). "Entrepreneurial Orientation, Learning Orientation, and Firm Performance," *Entrepreneurship Theory and Practice* 32(4), 635–657.

Werner, S., M. Praxedes, and H.G. Kim (2007). "The Reporting of Nonresponse Analyses in Survey Research," *Organizational Research Methods* 10(2), 287–295.

Wiklund, J. (1999). "The sustainability of the Entrepreneurial Orientation – Performance relationship," *Entrepreneurship Theory and Practice* 24(1), 37–48.

Wiklund J. (2006). "The sustainability of the entrepreneurial orientation-performance relationship," In *Entrepreneurship and the Growth of Firms*. Eds. Davidsson P, F. Delmar and J. Wiklund. Edward Elgar: Cheltenham, U.K.

Wiklund, J. and D. Shepherd (2005). "Entrepreneurial orientation and small business performance: a configurational approach," *Journal of Business Venturing* 20(1), 71–91.

Wolff, J.A. and T.L. Pett (2006). "Small-Firm Performance-Modeling the Role of Product and Process Improvements," *Journal of Small Business Management* 44(6), 268–284.

Wooldridge, B. and S.W. Floyd (1990). "The strategy process, middle management involvement, and organizational performance," *Strategic Management Journal* 11, 231– 41.

Zhao, Y., Y. Li, S.H. Lee, and L.B. Chen (2010). "Entrepreneurial Orientation, Organizational Learning, and Performance: Evidence From China," *Entrepreneurship Theory and Practice* forthcoming, DOI: 10.1111/j.1540-6520.2009.00359.x

Zhou, K.Z., C.K.B. Yim, and D.K. Tse (2005). "The Effects of Strategic Orientations on Technology- and Market-Based Breakthrough Innovations," *Journal of Marketing*, 69(2), 42–60.

## *Appendix A: Measurement scales and factor loadings*

| Constructs / Items | Factor loadings | | | | | |
|---|---|---|---|---|---|---|
| **Learning Orientation – Shared vision / purpose (α = .81)** | | | | | | |
| There is a commonality of purpose in my organization | .533 | | | | | |
| There is a total agreement on our organizational vision across all levels, functions, and divisions | .709 | | | | | |
| All employees are committed to the goals of this organization | .647 | | | | | |
| Employees view themselves as partners in charting the direction of the organization | .685 | | | | | |
| **Learning Orientation – Commitment to learning (α = .82)** | | | | | | |
| Managers basically agree that our organization's ability to learn new knowledge and/or skills is the key to our competitive advantage | | .552 | | | | |
| The basic values of this organization include learning as key to improvement | | .787 | | | | |
| The sense around here is that employee learning is an investment, not an expense | | .615 | | | | |
| Learning in my organization is seen as a key commodity necessary to guarantee organizational survival | | .827 | | | | |
| **Learning Orientation – Open-mindedness (α = .74)** | | | | | | |
| Personnel in this enterprise realise that the very way they perceive the marketplace must be continually questioned | | | .480 | | | |
| When confronting new strategic information, we are not afraid to reflect critically on the shared assumptions we have about our organization. | | | .563 | | | |
| We often collectively question our own biases about the way we interpret new strategic knowledge. | | | .843 | | | |
| We continually question perceptions we have made about our markets and customers. | | | .532 | | | |
| **Entrepreneurial orientation – Innovativeness (α = .80)** | | | | | | |
| In past 5 years we have marketed number of new lines of products or services | | | | .875 | | |
| In past 5 years changes in our product lines have been dramatic. | | | | .544 | | |
| Indicate fim´s level of prior years RandD expenditures relative to the average level of those in the industry? | | | | .546 | | |
| (1= lowest 20 percent of firms in the industry, 3= as much as an average firm in the industry, 5= highest 20 percent of firms in the industry) | | | | | | |
| **Entrepreneurial orientation – Proactiveness (α = .85)** | | | | | | |
| My firm typically initiates actions which competitors then respond to. | | | | | .734 | |
| My firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc | | | | | .923 | |
| In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products | | | | | .633 | |
| **Entrepreneurial orientation – Risk taking (α = .75)** | | | | | | |
| A strong proclivity for high risk projects (with chances of very high returns) | | | | | | .650 |
| Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives | | | | | | .860 |
| When confronted with decisions involving uncertainty, my firm typically adopts a bold posture in order to maximise the probability of exploiting opportunities | | | | | | .459 |
| **Growth (α =.76, Composite Reliability =.89, Average Variance Extracted =.80)** How satisfied are you with your firm´s performance on each of the following financial performance criteria? | | | | | | |
| Sales growth rate | | | | | | .687 |
| Overall growth rate | | | | | | .750 |
| **Profitability (α =.86, Composite Reliability =.91, Average Variance Extracted =.78)** How satisfied are you with your firm´s performance on each of the following financial performance criteria? | | | | | | |
| Net profit from operations | | | | | | .756 |
| Return on investment | | | | | | .825 |
| Return on asset | | | | | | .778 |

Principal axis factoring, Direct Oblimin rotation with Kaiser Normalization, loadings below .4 omitted. In Harman's (1976) one-factor test, the first factor only accounts for 24, 9% of the total variance. All items measured on 5-point Likert-scales